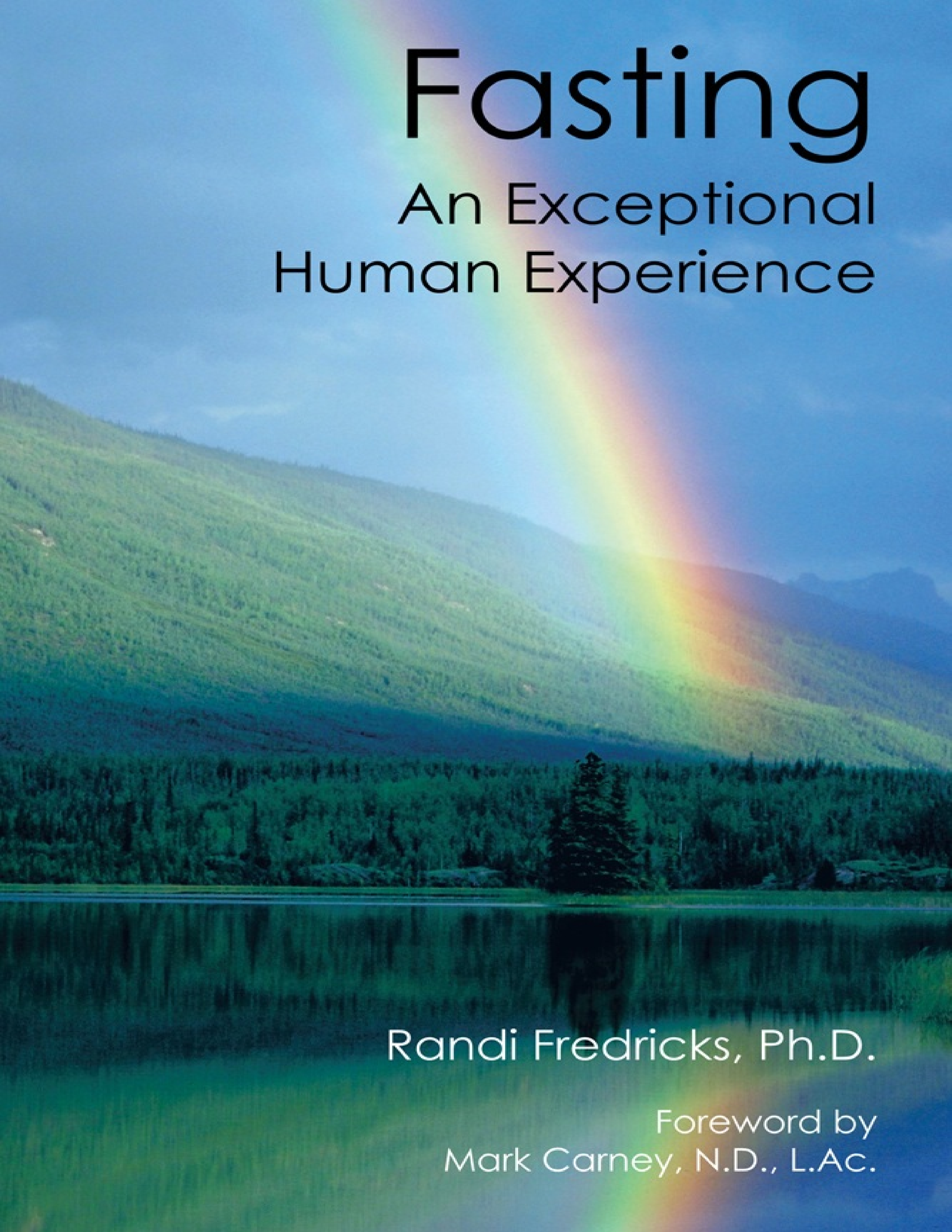

Fasting

An Exceptional Human Experience

Randi Fredricks, Ph.D.

Foreword by
Mark Carney, N.D., L.Ac.

Fasting:
An Exceptional Human Experience

Randi Fredricks, Ph.D.

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Note

The contents of this book are not intended to be medical or psychological treatment or advice. Because everyone is different and some people are not capable of fasting safely, it is strongly recommended that anyone who wants to fast consult with his or her doctor first. Anyone currently or previously under the care of a mental health professional should consult with them prior to fasting. Furthermore, it is always best to remain under a doctor's close medical supervision throughout a fast as well as the adjustment period afterward.

Dedication

To my mother and father, Virginia and Edward

Foreword

Everyone fasts. Thus, whether you know it or not, you are a student of fasting. Just like you, I am a student of fasting, too. I absolutely love the topic of fasting and in essence have dedicated my life to studying it. Personally, I have fasted many times and in many different ways for many different reasons. I have apprenticed with some of the world's leading fasting experts, such as Dr. Alan Goldhamer and Dr. Joel Fuhrman, and I have supervised many people during their fasts. I've written articles, conducted research, and presented at various medical conferences on the subject matter. Having spent the better part of more than one decade of my life scouring both the published medical literature as well as the lay literature on the topic of fasting, I came upon a startling discovery one afternoon in the spring of 2010 while surfing the Internet: Someone had done more fasting research than I! Someone actually loved the topic of fasting more than I. How was this even possible? I was impressed.

Enter Dr. Randi Fredricks. What I had stumbled upon were several articles she wrote on the topic. I read them all. They inspired me to learn more—to dig even deeper. I was shocked and thought, “How is it that I had not come across her work before now?” I picked up the phone and called her. When we spoke, she was about to start her landmark study examining the antidepressant effects of fasting, a study that became the focus of her doctoral dissertation. At one point, we discussed the concept of collaborating on a book about fasting. Dr. Fredricks and I eventually met in-person on August 21, 2010, in Santa Rosa, California, at the National Health Association's annual convention, featuring world renowned fasting experts Drs. Alec Burton and Keki Sidwha. I still remember how incredible it felt to be in the presence of these masters. And yet, somehow my notion of writing a new book on fasting seemed to eclipse my awe of these giants and took center stage in my thoughts. While my personal and professional life precluded me from pursuing such a project, Dr. Fredricks single-handedly and passionately plugged away at the goal. She painstakingly collected and compiled the fascinating information that you are about to read in the pages that follow.

Fast-forward two years. Dr. Fredricks managed to write the most comprehensive, up-to-date text yet available on fasting. In this book, and for the first time anywhere, Dr. Fredricks has presented a scholarly and encyclopedic review of the many facets of fasting, truly from a physical, mental, emotional, spiritual, and historical perspective. Leaving no stone unturned, she has collected countless writings and research from literally all around the world. There are various aspects about the topic of fasting that can be quite complex, and Dr. Fredricks covers each of them with ease, completely referenced: the history, the physiology, the religious and spiritual details, political fasting, what the current research shows, what effects fasting has on the psyche, and so much more. Her commitment to fasting is a testament to her passion and dedication to the subject matter. And she walks the walk, routinely fasting. Since our meeting in 2010, I have come to know Dr. Fredricks well. We sometimes call or email each other, sharing our excitement when one of us has unearthed an old study or come across a new article on fasting.

Fasting is more than a practice that is used for achieving profound psychological and medical benefits. The secret I have learned about fasting is this: It opens up a window into virtually every aspect of our health and our humanity, such as promoting our wellness, extending our lives, preventing future illnesses, treating existing diseases, taking a stand on political matters, and perhaps most importantly, creating an opportunity to witness the great mysteries that life offers us. So, who is this book for? Remember, everyone fasts. Therefore, this book is for everyone, whether you are a student, a clinician, a researcher, a historian, a politician, a public health official, or are simply just curious and want to learn more about your health. We all can benefit greatly from reading this book. Reading it, you will see how fasting has shaped history, civilizations, world religions, our culture, our bodies, our health, and our daily lives. I thank Dr. Fredricks for her successful Herculean efforts of weaving an ancient tradition with modern science and over 200 years’ worth of information (plus a pinch of common sense) into a beautiful in-depth book, and remaining true to the roots of the tradition. Long before you read the last page, I am confident you will agree that fasting truly is an exceptional human experience.

Mark Carney, N.D., L.Ac.
Contributing Author, *Foundations of Naturopathic Medicine Textbook*
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Introduction

Fasting is a fiery weapon. It has its own science.
No one, as far as I am aware, has a perfect knowledge of it.

—MOHANDAS GANDHI (2001/1961, p. 58)

As a psychotherapist, I often talk with people who have sacrificed self-care in lieu of other activities, usually work related. Many of them have either abandoned a spiritual practice or never had one. In these instances, part of my work is encouraging the development of such a practice.

It seems now—more than ever—people struggle to find meaning and significance in their lives. Buddhist teacher and psychotherapist Jack Kornfield (2001) said, “We live in disordered times, complicated, distracted, and demanding… Whether in prayer or meditation, in visualization, fasting, or song, we need to step out of our usual roles, out of the busy days on automatic pilot” (p. 26).

Just as there are different reasons for fasting, there are several definitions. Psychiatrist Len Sperry (2001) said fasting is used “as a means of weight loss, detoxification of the body for medical purposes, or as a spiritual practice. When performed as a spiritual practice, fasting is defined as abstention from food for the purification of one’s motivation. All the great spiritual traditions recognize its merits” (p. 154).

Definitions of fasting tend to overlook its enormous power. Annemarie Colbin (1986) described its wide-reaching effects:

> Perhaps no where is the power of food more evident than when food is abstained from. Entire religions have evolved from one man’s fast, empires toppled, wars halted. For examples we need look no further than Jesus, Muhammad, the Buddha, Gandhi. (p. 257)

After engaging in a number of spiritual practices, I found water-only fasting to be the most beneficial, partially because it can reduce thoughts that are associated with melancholy and increase feelings of well-being. Fasting does this through several mechanisms.

First, fasting changes brain chemistry, producing an antidepressant effect (Michalsen et al., 2003). Additionally, fasting can relieve the symptoms of a wide variety of medical problems, thus enhancing a feeling of wellness (Beleslin et al., 2007; Fuhrman, 2002; Horne et al., 2008; Kanazawa & Fukudo, 2006). Furthermore, fasting initiates altered states of consciousness and provides exceptional human experiences (Cortright, 1997; Epstein, 1995; Frager & Fadiman, 2005; Peters, 1975; Vaughan, 1993). Through these various means, fasting has the potential to alter the perception of the participant.

Frances Vaughan (1993) suggested that fasting is a useful clinical intervention in transpersonal psychotherapy. According to Vaughan, methods such as fasting, drumming, and chanting produce an altered state of consciousness that can have "powerful therapeutic effects" (p. 164). Brant Cortright (1997) echoed this belief, and called fasting "an effective non-drug technique useful for inducing an altered state of multidimensional consciousness" (p. 16).

In psychology, fasting is a versatile clinical intervention because it can be used briefly or for longer periods in a supervised setting. Additionally, it can be used therapeutically in conjunction with other therapies. Stanislav Grof (1998) recommended fasting before engaging in LSD psychotherapy, also known as *psychedelic treatment.*

Fasting is often associated with the phenomenon of Exceptional Human Experiences (EHEs) because of the types of experiences it provokes. The first person to classify EHEs was Rhea White (2010), and she defined such experiences as follows:

> Exceptional Human Experiences (EHEs) are spontaneous anomalous experiences of the psychic, mystical, encounter, and death-related type. They may be transcendent or mystical, and often have the potential to be transformational, depending on how the experiencer relates to her/his own experience or what he/she does with it. 1)

White (1994) went on to classify EHEs into categories, many of which are associated with the experience of fasting. The phenomenon of EHEs are reported by people who are fasting in the form of tremendous bursts of meaningful insights and heightened creativity. In many instances, the faster’s life view and whole worldview changes, and a new perspective is forged.

Since prehistory, fasting has been used in various ways as a means of transformation. As a spiritual practice, it is the oldest and most common form of asceticism and is found in virtually every religion and spiritual tradition.

Political fasts—more commonly known as *hunger strikes*—have been around since antiquity. Fasting was used as a method of protest and receiving justice in pre-Christian Ireland as well as in India and Japan. Whether a hunger strike is undertaken by a group or an individual, it has the power to create massive paradigm shifts in individual and global consciousness.

In medicine, fasting is one of the most promising therapies. Doug Lisle and Alan Goldhamer (2006), who have worked with fasting patients for over 25 years, said, “A large set of self-healing machinery is facilitated during water-only fasting, many components of which are more active during fasting than in any other state. As a result, water-only fasting is a self-healing adaptation of great practical significance” (p. 185). Research has suggested that the healing state that is activated by fasting may be so far reaching that it even causes certain drugs to work better (Johnson & Wormsley, 1989; Lee et al., 2012).

Using existing literature and original research, this book focuses on the transformative characteristics of fasting in a variety of contexts. The relationship between fasting and transpersonal psychology is examined, with a special focus on peak experiences, consciousness, and other exceptional human experiences. Fasting is considered from contemporary and historical perspectives, exploring the purpose and scope of practice in psychology, medicine, and religion. By examining how fasting affects the mind, body, and spirit, an attempt is made to demonstrate its holistic nature.

Research into the effects of fasting has been sporadic. A review of the current literature revealed an absence of research on fasting and psychological disorders since the 1970s. Even with renewed interest in fasting, studies involving human participants are scarce. Although research has recently been conducted suggesting the effectiveness of fasting for patients with hypertension (Goldhamer et al., 2002), cardiovascular disease (Horne et al., 2008), diabetes (Goldhamer, 2002), and cancer (Lee et al., 2012), research focused on the benefits of fasting for mental health is still lacking. Scientists have focused primarily on the medicinal aspects of fasting, overlooking the psychological and spiritual benefits. This book examines previous studies on fasting, the author's own fasting study, and suggests areas for further research in the field of psychology. Included is a detailed report of the author's research into water-only fasting as a treatment to reduce the symptoms of depression.

Whether you are a health professional, an individual who fasts regularly, or someone who is considering fasting, this book will hopefully provide some valuable information you have yet to discover. One caveat here; many of the topics in this book required extensive literature reviews, representing a vast array of facts as well as opinions. Because fasting is generally looked at in religious, medical, and psychological contexts, it tends to be exceptionally controversial, making both proponents and opponents highly opinionated.

Nearly every language has a word for fasting (Russell, 1998). Yet, within large, global communities with all their diversity, there are many variances in attitudes with regards to fasting. Furthermore, the manner in which fasts are conducted can vary widely in different approaches and traditions. It is reasonable to assume that every perspective is not covered in this material. With a deep respect for the subject, the author has attempted to present this information in as accurate a manner as possible.

1

Types of Fasting

The best of all medicines is resting and fasting.
—BENJAMIN FRANKLIN (as cited in Weems & Craig, 2010, p. 109)

In the broadest sense, fasting is the act of voluntarily abstaining from some or all food, drink, or behavior, over a specific period of time for spiritual, health, or political reasons. In the common era, the definition of fasting has become distorted to such an extent that much of its original meaning has been lost. For example, the twenty-first century ushered in the chocolate fast, during which the individual ate only chocolate for a day (Bliss, 2011).

Although water-only fasting (or water fasting) is the principal type of fasting discussed in this book, it can be helpful to understand other types of fasting. In exploring this, it becomes evident why fasting has been called one of the most misunderstood ancient practices (McKnight, 2009).

The primary reason that the definition of fasting has become so bastardized is because of there are so many different types of fasting. For example, some types of fasts are extremely restrictive, such as a dry fast. Dry fasting involves abstinence from all food and liquid (Filonov, 2008). Other fasts may be only partially restrictive, limiting particular foods or substances (Buhner, 2012). For example, a mono fast involves eating just one type of food (such as grapes) for a predetermined number of days (Szekely, 1950; Weeks, 2012). This has also been called “mono therapy” or a “mono diet” (Segen, 1998, p. 247). It should be noted that any time there is caloric intake, it is more accurately referred to as a modified diet as opposed to an actual fast.

Some fasting practices may preclude behaviors, such as sex or other activities, although this is more an act of ascetic renunciation than a fast (Ishwaran, 1999). A fast may also be intermittent in nature, alternating between days of eating and fasting.

In a physiological and medical context, fasting refers to the metabolic status of a person who has not eaten overnight, and to the metabolic state achieved after complete digestion and absorption of a meal (Marieb, 2004). A diagnostic fast refers to prolonged fasting (from 8 to 72 hours depending on several variables, such as age) that is conducted under observation for the purpose of investigating a problem (Kahler, 2010). In contrast to diagnostic fasts, water-only fasting has been recommended therapeutically for various conditions by health professionals and spiritual leaders of most cultures throughout history, from ancient to modern.

Methods and Categories of Fasting

There are many different types of fasting, and choosing the one that is most appropriate should include a recommendation from a health professional who is familiar with fasting (Fuhrman, 1995). Within different medical approaches and religious and spiritual traditions, there are various types of fasting protocols. The methods of fasting discussed here are outlined in a general sense.

There are a number of ways in which an individual can partake in a fast. The first, and most common, is fasting at home. Other places where an individual can fast include fasting clinics, retreats, and in the wilderness. When water-only fasting is supervised under specific guidelines, it is called *therapeutic fasting* (Burfield-Hazzard, 2005; Cott, 1975; DeVries, 1958; Fuhrman, 1995; Goldhamer, 1987).

Therapeutic Fasting

When water-only fasting is performed as a therapeutic medical intervention, it is called “therapeutic fasting” and is defined as “the complete abstinence from all substances except pure water in an environment of complete rest” (Goldhamer, 1987, p. 10). This definition is within the protocol of the standards set forth by the International Association of Hygienic Physicians (IAHP), a professional association for licensed, primary care physicians who specialize in the supervision of therapeutic fasting. The IAHP’s standards of practice for supervision of therapeutic fasting are as follows:

1. Prior to undertaking the supervision of a fast, the physician shall collect an appropriate case history and perform a physical examination.
2. Appropriate medical consultation shall be made for patients on prescribed medication when any modifications of the same are intended or anticipated.
3. Absent exceptional circumstances, appropriate laboratory monitoring is advisable for all fasting patients prior to initiating the fast. For all fasts beyond seven (7) days, ongoing continuous physiological monitoring shall be undertaken as deemed appropriate within the view of the attending physician.
4. Informed consent will be secured from all patients and the same will be documented in the patient's file.
5. Vital signs of all fasting patients will be monitored daily and more often if necessary in view of the attending physician. Such monitoring will consist of at least the taking of blood pressure and pulse.
6. A written daily record of progress will be made, which shall include appropriate vital signs.
7. Water shall be available to patients at all times.
8. Care shall be exercised in terminating the fast and supervised post-fasting recuperation consistent with hygienic principles. Patients shall be encouraged to remain under supervision until sufficient recovery has been attained. (International Association of Hygienic Physicians [IAHP], 1995)

The advantages of having this type of supervision during a fast can not be overstated. Although fasting is one of the most powerful tools in healing, it can pose risks for certain populations. Compared to an unsupervised fast, a supervised fast has an increased probability of being successful in a variety of ways; particularly emotionally and physically.

Clinical Example of Therapeutic Fasting

Before therapeutic fasting is undertaken, a pre-fasting evaluation is conducted, including a complete health history with evaluation of previous illnesses, injury, and treatment. Family history is examined along with an assessment of current symptoms and treatment. A comprehensive physical exam is completed and laboratory procedures such as urinalysis and blood work are performed. These tests give the practitioner a baseline to refer to during the fast, as well as the information needed to determine if therapeutic fasting is appropriate. According to Alan Goldhamer (1987), a member of the board of governors of the IAHP:

> Without a good base line, it can be very difficult to differentiate a positive healing crisis from a physiological compromise. For example, a person who develops an arrhythmia on the fourteenth day of a fast would be treated very differently from an individual who started the fast with the same condition. (p. 11)

Once the initial evaluation is complete, the practitioner determines the length of the fast. The duration may change, however, depending on circumstances that arise during the fast. Initial testing can help determine what additional evaluations may be needed during the fast. Patients’ vital signs are evaluated daily and blood and urine tests are performed weekly (Russell, 2006). Under some circumstances, such as certain medical conditions, patients will undergo testing more frequently.

Mark Carney (2010), a naturopathic doctor and acupuncturist who is trained and experienced in supervising therapeutic fasting, said that the following can indicate how a patient is managing the fast:

- How quickly ketosis is fully achieved
- How quickly the patient completely goes out of ketosis during the refeeding stage
- Quantity and quality of sleep that the patient gets throughout the fast
- Rapid decrease in serum potassium levels
- The presence or absence of fetors [offensive odor]
- The presence or absence of hunger
- The presence or absence of nausea and vomiting within the first few days of the fast
- The presence or absence of withdrawal symptoms (p. 33)

Clinics that provide supervised therapeutic fasting generally require that patients stay during initial refeeding, which can last about half the length of the water-only fast (Russell, 2006). Refeeding usually consists of fresh juices, then raw food, and then the addition of cooked vegetables and cooked grains.

In consideration of these factors, the purpose of supervision during a fast becomes more evident. An experienced supervisor theoretically increases the participant's chances of the having a safe and successful fasting experience. With the proper training, the supervisor can make necessary adjustments according to the individual needs of the patient.

Dry Fasting

Also called an *absolute fast* or a *complete fast,* a dry fast is considered the most extreme type of fasting (Buhner, 2012; Neeser, Ruedin, & Restellini, 1992; Wallis, 1980). Dry fasting is considerably more difficult and hazardous than other types of fasting. When dry fasting is performed, it is usually practiced for comparatively shorter periods compared to therapeutic fasting.

In religious and spiritual customs, dry fasting has been used in Hinduism, Jainism, Judaism, Islam, and Native American traditions (Cousens, 2005). Furthermore, it remains a central feature in Judaism, Jainism, and Islam.

There are a number of accounts in the Bible documenting dry fasting (Wallis, 1980). According to Acts 9:9 (New American Bible), Paul went on a dry fast for three days following his encounter with Jesus on the road to Damascus: “For three days he was unable to see, and he neither ate nor drank anything.” Esther also called for this type of fast: “Esther sent back to Mordecai the response: ‘Go and assemble all the Jews who are in Susa; fast on my behalf, all of you, not eating or drinking, day or night, for three days’” (Esther 4:15-16 New American Bible).

Christian monastics advocated dry fasts in an attempt to quell bodily desires (Moreira, 2000). The Brotherhood of the Cross and Star, a Christian movement founded in Nigeria in 1958, has traditionally practiced water-only fasting and dry fasting for 6 and 3 days respectively (Chryssides, 2001). Members of the Orthodox Church have historically undertaken a dry fast, beginning Saturday night and ending Sunday morning after communion (Smith, 2006). This is the same as an overnight fast that we all do every night.

Native Americans frequently dry fasted in numerous rituals and ceremonies, including the vision quest (Blumensohn, 1933). Some Native American traditions called for dry fasting for 96 hours, ending with drinking 3 to 4 quarts of an herbal tea, followed by regurgitation, and time spent in a sweat lodge (Pitchford, 2003). The Sun Dance Ceremony and the Rite of Vigil involved a pledge by the participant to take no food or water over a three-or four-day period (Tinker, 2004).

In traditional Chinese medicine, dry fasts have been practiced in an effort to influence chi (or *qi),* considered the energy of life. In qigong (also spelled *chi gong* and *chi kung),* dry fasting is used to increase chi and is often performed in conjunction with acupuncture and acupressure (Weidong, Sasaki, & Haruki, 2007).

When hunger strikers choose to fast without liquids it is called a “thirst strike” (Neeser, Ruedin, & Restellini, 1992). This type of political protest is discussed in detail in chapter 14.

In the late 1800s, Austrian naturopath Johann Schroth developed a procedure that incorporated dry fasting and used it to treat a variety of illnesses (Mamonov, 2002). Schroth’s therapy involved periods of daily dry fasting broken up with a small glass of hot wine in the morning and small quantities of food in the evening, such as bread, rice, oatmeal, and boiled vegetables (Bryce, 1912). Because Schroth’s protocol was so complex and difficult to follow, modified versions of it developed over time, such as the Schroth-Ebbard treatment and the Schroth-Cantani-Lahmann method, each supposedly better than the other at facilitating detoxification (Ebbard, 2000).

In the mid twentieth century, Russian mystic Porfiry Korneyevich Ivanov routinely dry fasted for one week at a time and recommended dry fasting for 42 hours once per week (Satter, 2001; Zavasta, 2007). Sergey Ivanovich Filonov (2008), a Russian doctor, has been using dry fasting with his patients for 20 years. In his book, *Dry Medical Fasting-Myths and Reality,* Filonov outlined several methods of dry fasting, including “Cascade” and “Fractional” (p. 139).

Cascade dry fasting is an intermittent fasting method of alternate day dry fasting developed by Valentina P. Lavrova (1999). With this method, the participant starts with one day of dry fasting followed by one day of eating, alternating thereafter between periods of dry fasting and eating, increasing the interval by one day for each interval. According to Filonov’s protocol, the individual does this until they reach five days of dry fasting, followed by five days of eating. In his book, Filonov (2008) said, “I know a doctor who cured his blood cancer, spending a cascade of five in five for a year” (p. 142).

Fractional or fractionated dry fasting involves dry fasting for 5 to 7 days, rehydrating for 3 days, then dry fasting again for 9 to 11 days (Kokosov, 1999). According to Filonov (2011), fractional fasting is safe and effective for the treatment of obesity.

The Russian tradition of dry fasting has two distinct approaches with regards to having contact with water during the fast (Zavasta, 2007). The first, *complete dry fasting,* consists of avoiding all contact with water. The second is *partial dry fasting* which allows for bathing and other forms of physical contact with water.

Filonov (2008) cautioned against doing a dry fast for longer than 5 days without supervision. Additionally, he recommended doing successively longer dry fasts, which is a protocol that some doctors use with water-only fasting as well (Fuhrman, 1995).

Filonov (2008) said that a dry fast must be broken by drinking small amounts of water very slowly. His protocol requires that the person consume approximately two liters over a two hour period. After rehydrating, Filonov suggested eating soft foods such as cooked dried fruit, kefir, vegetable soup, and drinking fluids such as broth, juice, and water. The following is a list of conditions that Filonov (2008) said he has successfully treated with dry fasting:

ovarian cysts

herniated discs

➢

uterine fibroids

migraine headaches

➢

endometriosis ➢

gastritis
➢

infertility ➢

gastric ulcers

➢

mastitis ➢

duodenal ulcers

➢

hot flashes ➢

pancreatitis

➢

parasitic infections ➢

cholecystitis

➢

viral infections

ulcerative colitis

➢

bacterial infections ➢

irritable bowel

➢

benign tumors

syndrome

➢

rheumatoid arthritis ➢

hemorrhoids

➢

- osteoarthritis
- type 2 diabetes mellitus

ankylosing spondylitis

atopic dermatitis

➢

asthma

➢

chronic urticaria

➢

chronic pneumonia

eczema

➢

pulmonary sarcoidosis

psoriasis

➢

atherosclerosis ➢

cystitis

➢

hypertension ➢

chronic pyelonephritis

➢

osteochondrosis

prostatitis

➢

sciatica ➢

prostate adenoma

According to Filonov (2008), dry fasting is immunostimulating and anti-inflammatory. He claimed that during a dry fast, the body eliminates toxins through a process of “incineration” during which the cells burn up toxic materials (p. 108). This procedure is called *autophagy,* the act of self-digestion by a cell through the action of enzymes originating within the same cell (Goldman, Taylor, Zhang, & Jin, 2010). The association between autophagy and fasting is discussed further in upcoming chapters 3 and 17. Conditions for which Filonov (2008) said dry fasting was contraindicated included:

Active tuberculosis of the lungs and other organs
- Hyperthyroidism and other endocrine diseases
- Cirrhosis of the liver

Pyo-inflammatory diseases of the respiratory and abdominal cavity
- Persistent irregular heart rhythm and conduction
- Low body mass index
- Thrombophlebitis and thrombosis
- During pregnancy and lactation
- Early childhood (14 years of age and younger)
- Late adulthood (70 years of age) (Filonov, 2008, p. 150)

Yakov Koyfman, a naturopath from the Ukraine, has supervised dry fasting, water-only fasting, and juice fasting at his clinic in Norcross, Georgia, since 1994. Koyfman (2012), who studied nutrition and fasting therapy in Russia, has only supervised dry fasting in rare cases.

Tonya Zavasta (2009), an author who has extensive dry fasting experience, recommended that anyone considering a dry fast try it for 24-hours first as an assessment. Zavasta dry fasts every day from 2:00PM to 7:00AM (Schenck & BidWell, 2009).

In his book *The Fasting Handbook: Dining From an Empty Bowl,* Jeremy Safron (2005) referred to dry fasting as “air fasting” (p. 9). According to Safron,

> When we are in dire need of cleansing and healing, it can be of great benefit to minimize consumption. This gives the body the opportunity to truly heal and recover. Air fasts are probably the most intense and

> are only recommended for the experienced faster. Be certain that you have a fasting coach or partner for this type of fast. (p. 9)

In medical terms, a dry fast is known as a *complete fast* (Neeser et al., 1992, p. 1992). Although there is no known peer-reviewed research on dry fasting, there have been studies on complete fasting in medical literature that illustrate how dangerous the procedure can be. For example, Marie Neeser, Patrick Ruedin, and Jean-Pierre Restellini (1992) recounted how an imprisoned hunger striker was admitted to the prison hospital for the third time with severe dehydration, hypernatremia, and acute prerenal failure after dry fasting over extended periods for multiple times. These are all common problems that occur when an individual goes without water for an extended period of time.

In 2011, a number of Internet blogs published discussions with people replicating dry fasts according to Filonov's dry fasting protocols. Again, there is no known peer-reviewed research on the efficacy of dry fasting, Russian or otherwise. Furthermore, experts in the field of therapeutic water-only fasting do not recommend prolonged dry-fasting, citing the potential health risks (Salloum, 1999).

Modified Fasting

Intermittent Fasting

A type of fasting that has been well-researched is intermittent fasting (IF) (Carlson & Hoelzel, 1946; Duncan, 1963; Duncan et al., 1963). IF is actually a pattern of repeated fasting and refeeding that alternates between periods of fasting (which typically means the consumption of water only) and non-fasting (Mattson & Wan, 2005).

Alternate day fasting (ADF) is a form of IF that is a 48-hour routine typically composed of a 24-hour fast followed by a 24-hour non-fasting period. Like other types of fasting, ADF has come under criticism. Research using rats has suggested that extended periods of ADF may be detrimental to the heart. According to one study, chronic ADF in rats resulted in the development of diastolic dysfunction with diminished cardiac reserve. The researchers concluded that "The deleterious effect of ADF in rats suggests that additional studies of ADF effects on cardiovascular functions in humans are warranted" (Ahmet, Wan, Mattson, Lakatta, & Talan, 2010, p. 853). It should be noted, however, that other research suggested that short-term ADF had positive effect on the heart (Bhutani, Klempel, Berger, & Varady, 2010).

As with other types of fasting, the design of the fast may be the key factor in study outcomes. For example, research has suggested that intermittent fasting is most beneficial and safest when there are at least five days of refeeding with reasonable caloric intake between the periods of time in which the individual is fasting (Varady & Hellerstein, 2007).

Research into IF began around the 1940s using rats (Carlson & Hoelzel, 1946). A 1945 study found that the life span of rats was significantly increased by using IF. Tests in which one group of rats were allowed the same food every day and other groups received IF showed an increased life span of approximately 20% in males and 15% in females in the IF group as compared to the control group. The pre-experimental condition of the individual rats was also found to be an important factor determining the life spans.

In human studies using IF as an intervention, similar beneficial results were found. In one study, ADF produced significant improvements in several markers, such as LDL cholesterol at the eight week mark (Bhutani et al., 2010). In another study, male patients receiving IF had reduced triglycerides and the females had increased HDL cholesterol (Allard et al., 2008).

IF has been used successfully as a complementary treatment for chemotherapy. In one study, the researchers found that IF produced a type of protection from the toxicity of chemotherapy treatments, allowing higher doses to be used, thereby resulting in a more effective treatment (Johnson, John, & Laub, 2007).

Under the correct conditions, IF may have beneficial effects on the health and longevity that are similar to the effects of caloric restriction, a dietary regimen that restricts calorie intake (Varady & Hellerstein, 2008). Research has suggested that ADF may be comparable to calorie restriction because it effectively modulates several risk factors in a similar fashion, thereby preventing chronic disease (Varady & Hellerstein, 2007). Researchers have found that calorie restriction can improve age-related health and may slow the aging process (Anderson, Shanmuganayagam, & Weindruch, 2009; Rezzi at al., 2009).

Hormesis is the term for generally favorable biological responses to low exposures to toxins and other stressors (Hayes, 2007). The hormetic phenomenon in aging is characterized as beneficial responses to stress through physiological adaptations, such as fasting. A number of studies have suggested that IF may function as a form of nutritional hormesis by initiating a hormetic response (Hayes, 2007; Mattson, 2008).

Another type of IF regimen is the 20/4 IF, which is a repeating pattern of 20 hours of fasting followed by 4 hours of non-fasting. This is also known as a shortened or condensed window of eating. The book *Fast-5 Diet and the Fast-5 Lifestyle* outlines a similar plan (Herring, 2005). In these protocols, the phase of the fasting period often starts at the commencement of nightly sleep and ends the following afternoon.

Juice Fasting

As the name suggests, juice fasting is the consumption of only juice for a specified amount of time, usually one to 14 days, but can also last much longer (Cabot, 2007; Calbom & Calbom, 2008; Meyerowitz, 1999). Juice fasts are sometimes marketed together with supplies, supplements, and support groups (Bragg & Bragg, 2004). Many of these groups have strict rules as to how the juice fast should be administered. For example, proponents of a raw food diet insist that a juice fast must only contain fresh juice obtained from organic fruits and vegetables processed through a juicer or juice extractor, and that prepackaged juices cannot be used because they have been pasteurized (Bernard, 2000; Karas & Griesse, 1981; Kenton,1986). Furthermore, they recommend that the fresh juice be consumed within one half hour of having been processed and it cannot be refrigerated.

Advocates of juice fasting believe that it enhances the body’s ability to expel the normal byproducts and toxins of metabolism (Calbom & Calbom, 2008; Meyerowitz, 1999). Some adherents believe that the human body is incapable of processing or excreting these byproducts under normal circumstances and that juice fasting stimulates this elimination (Bragg & Bragg, 2004).

Juice fasting is performed at facilities and retreats all over the world. The Buchinger clinics in Germany have conducted supervised juice fasts for 90 years. Although the Buchinger clinics call their method “therapeutic fasting,” this could be considered a misuse of the term since peer-reviewed research has defined therapeutic fasting as water-only fasting (de Toledo & Hohler, 2000; Fuhrman, 1995; Goldhamer et al., 2002). The

Buchinger website defines their therapeutic fasting protocol as follows:

> Buchinger's therapeutic fasting method is a modified fasting method. It supplies primarily carbohydrates (fruit juices and vegetable consommé) of approximately 250 kcal per day. These ingredients can be supplemented according to individual need by proteins in the form of milk products, and micro-nutritional elements (minerals, vitamins, micro-biotic foodstuffs). (Buchinger Bodensee, 2006, ¶1).

In 1991, Austrian naturopath Rudolf Breuss developed a 42-day juice fasting program which he claimed nourished the body and starved cancer. His book, *The Breuss Cancer Cure,* eventually sold over one million copies and was translated into ten languages (Breuss, 1995). The following is an example of Breuss' juice mixture that was the foundation of his plan:

- Red beet root, 300 grams (9.6 oz)
- Carrots, 100 grams (3.2 oz)
- Celery root, 100 grams (3.2 oz)
- Black radish, one small (1.06 oz)
- Potato, one egg-sized

He also formulated variations for different kinds of cancer. For example, the potato is optional except for liver cancer. Furthermore, the potato can be taken as a tea. According to Bruess, following his instructions to the letter was crucial to success.

There are only a few peer-reviewed studies supporting the efficacy of juice fasting (Huber, Nauck, Ludtke, & Scharnagl, 2003; Schlegel, 1956). One study of five men found that those who juice fasted had a small improvement in their blood cholesterol levels (Huber et al., 2003). Even with this limited evidence, some experts believe it can be useful for some populations, such as individuals who are not suitable candidates for water-only fasting (Bragg & Bragg, 2004). However, others caution that juice fasting can be more harmful than helpful, particularly for people with certain conditions as described in the following section (Griffin, 2003).

Contraindications of Juice Fasting

Juice fasting is contraindicated in the same populations as in water-only fasting, such as young children, pregnant or lactating mothers, and those with liver and kidney problems. People with a low body weight need to be monitored for protein-calorie malnutrition and other complication (Ding, Price, Bailey, & Mitch, 1997; Long, Schaffel, Geiger, Schiller, & Blakemore, 1979; McMahon & Bistrian, 1990). In certain conditions, such as cancer, autoimmune diseases, or other chronic illnesses, the body needs more nutrients than usual and juice fasting could exacerbate illness (Long et al., 1979; McMahon & Bistrian, 1990).

Diabetes mellitus, usually simply referred to as *diabetes,* is a group of metabolic diseases in which an individual has high blood glucose levels, either because the body does not produce enough insulin, or because cells do not respond to the insulin that is produced (American Diabetes Association, 2009). People who have diabetes or suffer from glucose problems should not attempt an unsupervised juice fast because the low-calorie intake along with the high intake of sugar that is found in juice can cause a number of problems (Bazzano, Li, Joshipura, & Hu, 2008; Crapo, 1985; McKeown, 2004).

When someone consumes a large quantity of simple sugars, as is found in fruit and vegetable juices, those sugars are quickly absorbed into the bloodstream, making blood glucose levels rise rapidly. This is not only potentially dangerous for diabetics, it may also increase the risk of diabetes in susceptible individuals (Bartkiw, 1993; Bazzano et al., 2008). In addition, juicing fruits and vegetables reduces a significant amount of the naturally occurring dietary fiber because most of the fiber is removed by the juicer. Dietary fiber is an important food to improve insulin sensitivity and prevent diabetes (McKeown et al., 2004; Priebe, van Binsbergen, de Vos, & Vonk, 2008).

Another problem that frequently occurs with juice fasting is diarrhea (Sapko, 2007). If diarrhea persists, dehydration occurs due to excessive loss of fluids and electrolytes (Wilson, 2005). When diarrhea is prolonged or severe, deficiencies occur with sodium and potassium, and abnormalities of chloride and bicarbonate also may develop. In contrast, bowel movements generally stop during water-only fasting after the first few days (Salloum, 1999).

Some experts suggest that water-only fasting is superior to juice fasting because it allows the body to rest in a manner that juice fasting does not (Neighmond, 2007). According to Naomi Neufeld, an endocrinologist at UCLA, water-only fasting does the following,

> Eventually the body burns up stored sugars, or glycogen, so less insulin is needed to help the body digest food. That gives the pancreas a rest. On juice diets recommended by some spas, you may lose weight, but your digestive system doesn't get that rest. (as cited in Neighmond, 2007, ¶6)

Master Cleanse

The master cleanse is a modified juice fast that was originally developed by Stanley Burroughs (1976) in the 1940s. Like a traditional juice fast, the master cleanse excludes any solid foods (Carson, 2008). There are three parts to the master cleanse. The first part consists of drinking one quart of water with two teaspoons of salt or one cup of herbal laxative tea upon awakening each morning. Next, 6 to 12 lemonade drinks are consumed throughout the day. The lemonade is made from purified or spring water, fresh squeezed lemon juice, organic maple syrup, and cayenne pepper. For the last step, one cup of herbal laxative tea is consumed in the evening (Woloshyn, 2007). The procedure is conducted for a minimum of ten days with the intent of detoxifying the body and removing excess fat (Burroughs, 1976; Glickman, 2011). Some popular weight loss programs, such as Medifast, have used a short, modified master cleanse with their clients (MedifastHealth, 2011).

Other health practitioners have used variations of Burroughs' master cleanse. In the early 1900s, Austrian physician Franz Xaver Mayr treated patients in his sanatorium with a concoction of weak herbal tea with honey and lemon juice administered over a 1 to 3 week period (Rauch, 1998). He developed Mayr Therapy, an intermittent fasting process where the patient consumes milk and dry white bread on refeeding days. Mayr Therapy, which is popular in Europe where it is offered in clinics and health spas, also includes abdominal massages and special breathing exercises.

In 1922, Arnold Ehret (1976/1922) employed a much simpler version. According to Ehret, "I gave all my fasters lemonade with a trace of honey and brown sugar for loosening and thinning mucus in the circulation" (p. 148).

Similar to juice fasting, there is no scientific evidence that the master cleanse removes any toxins or that it achieves anything beyond temporary weight loss. Though it is unlikely to be harmful over the short term, it might be harmful over time due to a deficiency of protein, vitamins, and minerals (Rodriguez, 2007). As a result of these deficiencies, individuals may experience headaches in the short term. When followed over a period of months, malnutrition is possible. The master cleanse has been described as an extreme fad or crash diet, and the weight that is lost during the procedure is usually regained (Miller, 2000). However, Medifast has successfully used their simplified version of the master cleanse to assist people in losing weight. It is important to note that this is only a small feature of the overall Medifast plan.

Fasting Versus Fad Diets

Any time a diet regimen requires consuming only a few types of foods, it runs the risk of becoming a fad diet. The term “fad diet” refers to idiosyncratic diets that promote short-term weight loss and often are suggested as a means of detoxification and improving health (McBean & Speckmann, 1974).

Some fad diets use the word “fast” because the participant stops eating all foods except for what is specified in the diet plan, or because the diet incorporates periods of fasting (Lewis, 2012). As explained previously, this is a modified diet—not a fast—in that food is being consumed. These types of fad diet plans can pose a serious health risk for some individuals. For example, whey fasting usually consists of drinking only whey, a protein derived that is from milk (Bodybuildingtoday, 2009). Although whey is rich in protein, vitamins, and minerals, the lactose stimulates digestion and can have a laxative effect (McBean &

Speckmann, 1974). Furthermore, too much protein and not enough fiber can lead to digestive issues such as constipation. Whey protein isolates are highly acid-forming and can cause low-grade metabolic acidosis, a buildup of acid in bodily fluids that can lead to kidney stones (Brazier, 2008). Similar problems and nutritional imbalances can be encountered using prepared medical foods.

Programs that involve the consumption of prepared medical or functional powdered foods lack the whole foods needed for a healthful diet. Like juice fasting and the master cleanse, these approaches are not the equivalent of water-only fasting because they involve the intake of substances other than water.

Determining the Best Method of Fasting

The answer as to which method of fasting is the best really depends on who you talk to. Of course, it is actually dependent on individual lifestyle, health issues, goals, and body chemistry. Oftentimes, people develop a preference for a certain type of fasting and believe that other methods are inferior. For example, I tend to think that water-only fasting is superior to juice fasting because of the problems associated with juice fasting. Because ketosis does not occur with juice fasting, the body does not get the same respite from glucose as is does with water-only fasting. In discussing the limitations of the master cleanse, juice fasting, and medical drinks, Mark Carney (2010) said,

> While these three approaches undoubtedly fall into the broader category of being called “cleanses,” they are not the equivalent of fasting in the technical sense of the word because they involve the consumption of substances other than water. Furthermore, these substances contain calories, often in high enough quantities to prevent individuals from fully or even partially going into ketosis. (p. 3)

Whatever method of fasting is considered, it is advisable to seek the advice of a health professional familiar with that type of fasting. This can significantly increase the chances of a successful and restful fast. One of the primary purposes of receiving supervision during a therapeutic fast is to maximize the healing effect and minimize any potential for harm.

2

Planning a Fast

Fasting is a magnificent multifaceted mystery. It's impossible
for us to grasp the scope of it with our finite minds.

—KRISTEN FEOLA (2010, p. 22)

The period during which a fast is planned can be as important as the fast itself. Making an error in judgment on where to fast, how long to fast, and how to break the fast can have serious health consequences. In determining these factors, some of the factors that may apply include the overall health of the participant, previous fasting experience, and practical issues, such as financial considerations. If an individual is planning to fast for the first time, even if only for one day, part of planning stage should include a visit to a physician who is familiar with fasting.

In his book *The Transformational Power of Fasting: The Way to Spiritual, Physical, and Emotional Rejuvenation,* Stephen Harrod Buhner (2012) said, "Whatever kind of fast you do, your environment should feel as supportive and loving as possible" (p. 122). Even if an individual has a stress-free job—assuming there is such a thing—it is best not to work while fasting. The consensus among doctors in the field of water-only fasting is that complete rest is an essential feature of a successful fast (Fuhrman, 1995; Lisle & Goldhamer, 2006; Shelton, 1934). According to Alan Goldhamer (1987),

Going without food-even for a few days-while working, exercising, worrying, *etc.* is not therapeutic fasting. A noisy, high stress and or non-supportive environment will not provide the body the opportunity to maximize the self healing mechanisms. To maximize the benefits of therapeutic fasting, *complete rest* is essential. (p. 10)

Most experts have suggested eating a preparatory diet prior to the fast.

Buhner recommended eating a whole foods diet before fasting, as other experts often suggest (Buhner, 2012; Fuhrman, 1995; Lisle & Goldhamer, 2006). At TrueNorth Health Center, a water-only fasting clinic in Santa Rosa, California, the preparatory diet prior to fasting is usually a vegan plant-based diet with no salt, oil, or sugar, referred to as a "plant-based SOS-free diet" (A. Goldhamer, personal communication, March 20, 2012; TrueNorth Health Center [TNHC], 2012a).

Making proper dietary changes prior to fasting can help reduce some of the symptoms of "withdrawal" from food that can occur during a fast (Fuhrman, 1995, p. 18). Joel Fuhrman explained what this withdrawal might look like:

> Headaches and other discomforts brought on by not eating are signs that the body has begun to withdraw from and detoxify waste products retained in body tissues… These detoxification symptoms usually do not occur in those who are in excellent health, with a lower level of retained wastes. When one is prepared properly with a low-fat, lowered-protein, natural, plant-centered diet prior to the fast, these symptoms, which actually are nothing more that withdrawal symptoms from a more rich diet usually do not occur. (p. 18)

In addition to poor diet, there are other factors that influence the degree of difficulty during a fast. Buhner (2012) pointed out some of these factors:

1. If you have never fasted before

2. If it has been a very long time since you have fasted

3. If you are middle-aged or older

4. If you are in a difficult life transition
5. If you are doing a deep, spiritual, wilderness fast
6. If you eat a diet high in refined foods
7. If you have been under high stress for some time
8. If you have high levels of toxins in your body (if your job entails any contact with synthetic chemicals on a regular basis, you will have a

high toxic load)
9. If you have taken a lot of pharmaceuticals during your life (p. 123)

Buhner’s list illustrated the numerous considerations involved in planning a fast and demonstrates the importance of consulting a medical professional prior to fasting. Additionally, it suggested why supervision can be particularly important for first-time fasters.

First time fasts are almost always more difficult than subsequent fasts. Illustrating this point, physician Rex Russell (1998) quipped “Fasting is sometimes glorious, sometimes healthy and sometimes sobering. However, if you have fasted for fun, you probably will not be lured into any activity that promises just fun in the future” (p. 225). Appropriate supervision provides the necessary support to prevail over the difficulties of a first fast, or any fast, for that matter.

Where People Fast

The following is a general description of places where people partake in fasting. Individuals undertake water-only fasts at clinics, retreats, at home, in the wilderness, or under the supervision of a fasting coach. Some clinics, retreats, and coaches only provide support for juice fasting. Supervised dry fasting is difficult to find in the United States, but is offered in Russia (Filonov, 2008).

Fasting Clinics

Fasting clinics are inpatient facilities where a fasting participant is treated like a patient. Treatment includes supervision by a medical team, which can consist of a variety of professionals, including medical doctors, naturopaths, chiropractors, and psychologists. This type of fasting is water-only fasting and is referred to as *therapeutic fasting.* One of the many advantages of being supervised in a clinic setting is the opportunity to have complete rest. Another benefit is receiving around the clock care.

Prior to admittance, the patient is screened to determine if fasting is appropriate for them. As discussed earlier, patients are often placed on a special preparatory diet for a predetermined period before the fast. Prior to the fast, a pre-fasting evaluation is performed (Goldhamer, 1987). This includes a complete health history evaluating previous illnesses, injury, treatment, and family history. If illness is present, current symptoms and treatment are assessed. Next, a comprehensive physical exam is performed and appropriate laboratory testing is conducted, such as urinalysis or blood evaluations.

If it is determined that a patient is not a suitable candidate for fasting, some clinics offer other programs for people who are unable to fast due to medical reasons. Alternative programs generally consist of a juice cleanse or a modified diet, such as the plant-based SOS-free diet used at TrueNorth Health Center (TNHC, 2012a).

There has been a decline in the number of clinics that provide supervision of water-only fasts in the U.S. due to a variety of factors. David J. Scott, a naturopath and chiropractor who supervised over 20,000 water-only fasts in his career, died in 2011, causing a temporary closure of his clinic in Strongsville, Ohio (Scott, 2001). Ralph Cinque (2012) has offered fasting supervision at his facility in Buda, Texas since 1995. In terms of clinics offering comprehensive supervision of water-only fasting according to the standards of the IAHP, TrueNorth Health Center in Santa Rosa, California is one of the last remaining facilities in the United States.

Fasting Retreats

Whereas therapeutic fasting is performed under the supervision of a fasting clinic or individual doctor, some people attend fasting retreats held at prearranged times at a dedicated or rented facility (Retreats Online, 2010).

Some retreats are held out-of-doors in the wilderness or the desert. For example, John V. Davis (2012a), a professor who teaches transpersonal psychology at Naropa University in Boulder, Colorado, has held vision quests that included three days of fasting in the canyon country of western Colorado. Davis is a staff member at the School of Lost Borders, a California-based organization that has provided vision quests since the 1970s. Steven Foster and Meredith Little (1980), were the founders of the school. Through his work at the school, Davis is affiliated with numerous other well-known vision quest facilitators, such as Jeffrey Duvall, a wilderness rites of passage guide who has led soul-based men’s leadership trainings since 1988 (Davis, 2012b).

Fasting retreats usually offer juice or water-only fasting, although juice fasting tends to be more common. For example, Gabriel Cousens (2012), a physician who operates the Tree of Life Rejuvenation Center in Patagonia, Arizona, has held an annual juice fasting retreat since 2004. In 2012, the event was held in Yehiam Fortress National Park, Israel.

Examples of retreats that have supervised water-only fasting include the Tanglewood Wellness Center (2010) in Sora, Panama, and Mind Your Body in Hilo, Hawaii (Baylac, 2010).

Some retreat facilitators offer therapeutic and medical support, the level of which can vary widely as can their credentials and experience (Baylac, 2010; Cinque, 2010; Tanglewood, 2010). In most cases, some type of supervision is usually provided as part of the retreat experience.

Fasting in the Wilderness

The Wild Foundation (2011) defines wilderness as “The most intact, undisturbed wild natural areas left on our planet—those last truly wild places that humans do not control and have not developed with roads, pipelines or other industrial infrastructure” 3).

Wilderness fasting, which has historically been water-only fasting, is associated with biblical figures, such as Jesus who undertook a 40-day fast in the desert (Franklin, 2008). Another population well-known for fasting in the wilderness are the forest monks, a group of monastics who have lived for centuries in the woods (Kinnard, 2006). The vision quest conducted by Native American populations involves fasting in the wilderness, usually for a minimum of 4 days (Foster, & Little, 1980).

Fasting in nature helps to accentuate the spiritual aspects of fasting. Buhner (2012) said, “Spiritual fasting in wilderness can be a deeply humbling experience… When we stop eating, we no longer receive sustenance in physical form but begin instead to rely on powers greater than ourselves and to seek a food only they can bring” (p. 31).

Sergey Filonov (2008) recommended fasting in mountains or near a body of water. He supervised patients at his center at the Altai Mountains in Russia. Filonov (2011) described the area as follows, “Clean air, a powerful energy of the mountains and the river Katun, clear starry sky, the chirping of birds, an incredible silence, all this forms a healthful climate” 4). The benefits of fasting in such a serene setting close to nature cannot be overstated.

Fasting Coaches

In addition to fasting clinics and retreats, there are fasting coaches who assist individuals through the fasting process (Johnston, 2010; Medicine Man, 2010; Stephenson, 2010). As with most professions, the experience and credentials of fasting coaches differ. In some instances, fasting coaches are licensed doctors, such as naturopaths, chiropractors, or medical doctors (Natural Hygiene Network, 2010). Some of these physicians are trained by a fasting clinic recognized by the IAHP (IAHP, 2008). When trained in this manner, the practitioner will follow the procedures recommended by the IAHP. Fasting coaches who fall outside this protocol set their own guidelines.

Some fasting coaches provide supervision on an out-patient basis based in their clinic. For example, Mark Carney, a naturopath trained in fasting supervision according to IAHP standards, supervises fasting patients from his clinic in Denver, Colorado, which he operates with his wife, Carly Letzt Carney, a chiropractor (Your Healing Place, 2011). Some coaches have retreat centers, and will offer the option of longdistance coaching. Although longdistance coaching may be sufficient for some individuals, it lacks the supervision that is generally recommended for first-time fasters and those with specific health problems.

Fasting at Home

Fasting at home is different from participating in a fasting program at a clinic or retreat. Fasting clinics and retreats require leaving home and daily routines behind, thereby increasing the chances of having a peaceful and restful fast (Shelton, 1974). Such facilities tend to have tranquil settings which greatly enhance the fasting experience (Cinque, 2010; Moinhos Velhos, 2010; Tanglewood, 2010). In addition, fasting clinics provide screening, education, and other support, as do some retreats (Cinque, 2010; Tanglewood, 2010; TNHC, 2010).

A number of authorities on fasting have discussed fasting at home. In the 1920s, physician Otto Buchinger Sr., founder of the Buchinger juice-fasting clinics in Germany, developed guidelines for people who wanted to fast at home (Atkins, 2005; Buchinger, 2011). Herbert Shelton (1974), author of the largest body of literature on water-only fasting, said,

> Perhaps the greatest obstacle to fasting at home is the almost

> inevitable opposition of the faster’s family… . On the other hand, where there is family cooperation, a fast in the home is carried out with ease, peace and success. (p. 52)

Many people fast at home without guidance and do not encounter problems (Cott, 1975; Lagerquist, 2010). However, any time an individual fasts, there are risks. Even people who fast at home for one or two days should be screened by a medical doctor before fasting, especially if it is their first time (Salloum, 1999; Shelton, 1974).

Length of Fasting

In discussing the appropriate length of a fast, questions arise as to how long an individual can go without food and what is the longest anyone has fasted. The 1905 edition of *The Encyclopedia Americana* mistakenly reported that “From 8 to 10 days is regarded as the usual period during which human life can be supported without food” (Beach & Rines, 1905, p. 505). This misnomer persists today, particularly among laypeople who are unfamiliar with fasting. Misunderstandings exist in the medical community as well despite numerous studies published in peer-reviewed medical journals that prove the survival of thousands of human subjects who fasted for the duration of two weeks or longer. In a 2004 publication, Alan D. Lieberson, a medical doctor, lawyer, and the author of *A Physician’s Guide to Advance Medical Directives,* said, “For total starvation in healthy individuals receiving adequate hydration, reliable data on survival are hard to obtain” (Lieberson, 2004, ¶2; Lieberson, 1993). Similar fallacies exist with the alternative medicine community. In the book *Dictionary of Alternative Medicine,* physician Joseph C. Segen (1998) stated “ . . . complete fasts (abstinence from all liquids and solids) should be limited to 24 hours or less, as they cause significant physiological stress…” (p. 140). Physician supervised dry fasting for periods of 2 to 3 days has occurred in Russia for over 20 years (Filonov, 2008; Kokosov, 2001). To some degree, the physiological stress that Segen referred to is considered to be an essential feature of the healing process, a concept known as hormesis (Filonov, 2008).

The longest known period that a human has survived without food and water is 17 days. Andreas Mihavecz of Bregenz, Austria, was left by mistake in a prison cell without food and water and was included in *The*

1997 Guinness Book of World Records as the world's longest deprivation of food and water. Not surprisingly, he was near death when he was discovered (Mamonov, 2002).

In terms of the longest known fast, that was claimed in 1973 by a man known only as "Mr. A. B" who went 382 days without food under medical supervision (Stewart & Fleming, 1973).

In fact, fasts of 100 days have been recorded in recent scientific literature (Goldhamer, 2003). In therapeutic fasting, the length of a fast is generally 10 days to 3 weeks (Holzman, 1998). According to Alan Goldhamer (2003), director of the TrueNorth Health Center in Santa Rosa, California, his clinic "routinely supervise water-only fasts of up to 40 days-and in certain circumstances, even longer" (p. 48). Goldhamer (1987) explained, "Body reserves differ from individual to individual. But a typical 155 pound male at normal weight has enough reserves to fast for between two to four months" (p. 11).

The lengths of fasts are difficult to predict beforehand (Salloum, 1999; Shelton, 1974) and vary widely (Cott, 1975; Kirchfeld & Boyle, 1994; Ryan, 2005), although the course is generally between 1 and 40 days (Fuhrman, 1995). Shelton (1974) said, "No man is wise enough to predetermine the amount of fasting that will be required in a given state of the organism, nor can one tell in advance how much fasting will be safe in a particular case" (p. 52).

In therapeutic fasting, a practitioner's decision to terminate the fast is highly individualized and is based on the patient's history, symptomatic presentation, physical examination results, laboratory results, psychological state, and personal circumstances (Salloum, 1999). Goldhamer (1987) said, "It should be understood that the fast itself is an important diagnostic tool in determining duration" (p. 11).

Those fasting at home without a coach must decide on their own when termination is appropriate. In most instances, making such a determination can be problematic due to a lack of diagnostics, education, and experience.

Spiritual Preparation

Whether or not a person has religious briefs, it may be useful to consider the spiritual ramifications of fasting prior to beginning a fast. Wherever the fast occurs—at home, in the wilderness, or at a facility—

fasting can provide extraordinary life-changing experiences. Even people who fast in a clinic setting often have breakthrough moments. For some people, a paradigm shift may occur more easily in a supervised setting where there is a feeling of safety and being well-cared for.

When an individual intends on fasting for a spiritual purpose, there can be certain "rites of preparation," such as those found in Native American traditions (Irwin, 1996, p. 108). For example, Lakota Sioux rituals include purifying the place where the person will fast with charms made by a shaman. Other rituals performed before fasting include smudging (burning sage), chanting, drumming, and participating in a sweat lodge (Shannon, 2001).

If you are planning a fast that will have deep meaning to you, it may be helpful to create your own ritual before you fast. My favorite way to prepare for the spiritual aspects of a fast is to create an altar. A small altar can be made wherever you fast, whether at home, a retreat, or a fasting clinic. The altar is made up of small objects that have profound personal meaning, such as photographs and trinkets. In Buddhism and Taoism, talismans have long been used as a means to strengthen the power of fasting (Ching, 1997; Thomas & Pavitt, 2009).

It is best to create the altar where you will see it daily during the fast. The idea is that even short glances of it will keep you grounded in the purpose of the fast. This ritual can be particularly useful when the reason for the fast is to help someone else who is ailing. Placing the person's photograph in the center of the altar helps sharpen the healing focus of the fast. A similar ritual is practiced by women in Hinduism during fasting (Pearson, 1996).

If a fast is going to being influenced by a Taoist tradition, a visit to the acupuncturist may be in order. In traditional Chinese medicine and Taoism, the small intestines are balanced through a combination of diet and acupuncture (Reid, 1989).

The Use of Other Therapies with Fasting

There are two different schools of thought on using adjunctive treatment modalities while fasting. The first school is adamant that a person fasting should not receive any additional therapies unless absolutely necessary. The second school believes that other therapies can enhance the experience of fasting and in some instances augment healing.

Alan Goldhamer, widely considered one of the foremost authorities on water-only fasting, said that his clinic uses adjunctive therapies only when needed (personal communication, March 20, 2012). The reasoning behind this has to with allowing the patient to experience the healing qualities of the fast without adding any invasive measures. That being said, Goldhamer’s clinic, TrueNorth Health Center, has a number of health care professionals on staff, including medical doctors, naturopaths, chiropractors, and a psychologist (TNHC, 2012b). These professionals have a variety of duties beyond potentially assisting a fasting patient. According to Goldhamer, the use of another treatment modality in conjunction with fasting would come into play under specific circumstances. A theoretical example he gave was that of a fasting patient having back pain severe enough to interfere with sleep, in which case a gentle chiropractic adjustment might be in order.

At the Buchinger juice-fasting facilities in Germany, professionals from different therapeutic areas attend to the fasting guests. The expertise of these practitioners includes medicine, nutrition, physical therapy, body care, and psychology (de Toledo & Hohler, 2000). The approach at Buchinger is considerably more spa-oriented than at a traditional water-only fasting clinic, such as TrueNorth Health Center. In addition, clients at Buchinger often get vegetable broth and milk products (Buchinger Bodensee, 2006). If an individual is consuming all of these food stuffs, it would actually be considered a calorie restricted diet as opposed to a true fast.

At the Goryachinsk resort and sanatorium in the Republic of Buryatia in Russia, fasting therapy has been practiced since 1994 (Batayeva, Sokolova, & Serebrennikov, 2001). Goryachinsk patients receive daily enemas, and in many instances partake in massage, acupuncture, saunas, and other treatments.

The purpose of discussing adjunctive therapies is to address the fact that some individuals (both physicians and lay people) promote using such therapies while fasting. Whether an individual is doing a water or juice fast, using additional therapies poses some risks. It should also be noted that many of these therapies may be better tolerated during juice fasting (or while eating a calorie restricted diet) than during a water-only fast. Furthermore, water-only fasting may reduce or eliminate the need for procedures that are performed for detoxification purposes.

Colon Hydrotherapy

Colon hydrotherapy (also called colonics, colon cleansing or colonic irrigation) involves using a tube to inject water into the colon via the rectum either by visiting a qualified colonic therapist or by using an at-home system, usually referred to as an enema (Bowling, 2006).

The use of colonics while fasting dates back ancient Egypt and Greece, and to the tenth century AD when Chinese physicians combined fasting with herbal colonics (Bowling, 2006; Gadalla, 2007; Reid, 1989). The purported benefits of colonics were founded on the belief that intestinal waste poisons the body through a process called “autointoxication,” a concept based on medical beliefs of the ancient Egyptians and Greeks (Ernst, 1997). The autointoxication hypothesis suggests that the accumulation of putrefied feces in the large intestine harbor parasites and pathogenic gut flora, causing general ill-health (Cartwright, 2003).

After colonics became popular at health spas in the early 1900s, *The Journal of the American Medical Association* responded in 1919 with an article disputing the autointoxication theory and condemning the practice (Alvarez, 1919). In spite of such condemnations, the autointoxication theory remained popular throughout the twentieth century. Meanwhile, other literature appeared discrediting the autointoxication theory, such as a 2005 article in the *American Journal of Gastroenterology* (Muller-Lissner, Kamm, Scarpignato, & Wald, 2005).

Researchers opposed to the use of colonics have claimed that it causes dehydration and a loss of electrolytes (Bastedo, 1932; Cohan, Kadakia, & Kadakia, 1992). However, studies have not found any significant dehydration or depletion of electrolytes or minerals in individuals receiving colonics (Collins & Mittman, 1990; Richards, McMillin, Mein, & Nelson, 2006).

Colon hydrotherapy is still widely practiced in health spas, private offices, and at home. The Buchinger clinic suggests having a colonic every other day during a juice fast (de Toledo & Hohler, 2000). Some colon therapists add herbs, vitamins, and other preparations to the water, which introduces foreign substances into the body (Haas & Levin, 2006). Any time an individual has a colonic, it can interfere with delicate intestinal flora and probiotics may be needed afterward (Calbom &

Calbom, 2008).

A 2011 study from the Georgetown University School of Medicine entitled *The Dangers of Colon Cleansing* had a predominantly negative view of colonics. The authors noted “There is an abundance of studies noting side effects following the use of cleansing products including cramping, bloating, nausea, vomiting, electrolyte imbalance and renal failure” (Mishori, Otubu, & Jones, 2011, p. 573). The researchers claimed to have found that many colonic therapists had little or no training. Other studies have cited serious complications including gastrointestinal perforation from improper insertion (Handley, Rieger, & Rodda, 2004), and amoebic infection from poorly sterilized equipment (Istre et al., 1982). In the 1980s, several people died from severe intestinal infections following colonics (Bowling, 2006). For hygienic and safety reasons, the qualifications of the colonic therapist is of the utmost importance.

A 2006 article published in the J*ournal of Alternative and Complementary Medicine* had a positive view of colonics (Richards et al., 2006). Although the authors admitted that the greatest risk was due to infections, that was their only criticism and they were clearly in support of the practice.

Enemas are the lighter version of colonics. Enemas, which are usually self-administered with an enema bag from a local drugstore, have long been a subject of controversy among water-only fasting advocates (Meyerowitz, 1999).

William Howard Hay (1929), a physician and founder of The East Aurora Sun and Diet Sanatorium, was an advocate of frequent enemas during fasting. Hay graduated from the New York University Medical College in 1891 and spent the first 16 years of his medical practice in regular medicine before turning to more natural methods. Hay routinely fasted patients at his sanatorium for 7 to 30 days and prescribed enemas.

Herbert Shelton and Edward Hooker Dewey were against the use of enemas, whereas Linda Burfield-Hazzard and Hereward Carrington argued that they were an indispensable part of a fast (Carrington, 1996/1953; Shelton, 1934). It is interesting to note that Carrington (1996/1953) said, “Dr. Shelton and others are opposed to the enema, while the fast in progress. He has had great experience with fasting, and his opinion in this matter, I feel, be given due weight” (p. 78). Shelton

(1934) summed up his belief about enemas and said,

> There is no more need for, nor benefit to be derived from the enema during the fast than at other times. What is more, if no enema is used, normal bowel action will be established much sooner after the fast than if the enema is employed. (p. 160)

Goldhamer pointed out that any need for an enema is normally eliminated when the patient follows the appropriate diet prior to water-only fasting (personal communication, March 20, 2012). Additionally, Goldhamer noted a preference toward avoiding practices that could potentially interfere with the natural healing processes that occur during a fast. Similarly, some Chinese medicine doctors have recommended the avoidance of adjunct therapies during a fast because it can disturb the patient's chi (H. Liu, personal communication, March 29, 2012). On the other hand, Joel Fuhrman (1995) has been in support of using an enema for his fasting patients within the first few days of the fast in order to prevent bowel impaction. Based on this discrepancy in opinions, it is probably safest to follow the recommendations of the physician or health care practitioner supervising the fast.

Dry Skin Brushing

Dry skin brushing, also called dry brushing or brush massage, involves using a soft, natural bristle brush to stimulate the perfusion and metabolic activities of the skin (Safron, 2006). Dry brushing of the skin was found in the ancient tradition of Ayurvedic medicine (Miller, 2002). At the Buchinger clinics, dry skin brushing is recommended as part of their juice-fasting program (de Toledo & Hohler, 2000).

In the book *Wisdom From the Monastery: A Program of Spiritual Healing,* Bernhard Muller (2010), recommended an entire skincare regimen while fasting, including dry skin brushing, wearing clothes made of natural fibers, and avoiding make-up.

Proponents of dry skin brushing claim that it increases blood circulation, encourages the discharge of metabolic wastes, and causes lymphatic drainage (Bragg & Bragg, 2004; Goldberg, Anderson, & Trivieri, 1994; Haas & Levin, 2006; Miller, 2002; Safron, 2006). However, there is little peer-reviewed research on dry skin brushing, and the studies that do exist focus on esthetics.

Liver Compress

A liver compress, or hot liver pack, involves using a hot water bottle on a thin moist cloth applied to the abdomen near the liver for 30 to 60 minutes. Liver compresses are a part of the detoxification regimen at Buchinger (de Toledo & Hohler, 2000). According to Bernhard Muller (2010), a liver compress should be performed every day between 1:00 and 3:00 PM while fasting because that is when the energy supply to the liver is at its lowest. This is based on the principle of the Chinese horary clock which portrays the body’s complete functions as well as its relationship with diet over each 24-hour period (Hicks, Hicks, & Mole, 2011). According to the clock, there are 12 meridians, each taking the lead for two hours. The small intestine is represented between 1:00 and 3:00 PM.

There are few published studies on the use of hot abdominal compresses and reviews are mixed (Helfand & Bruno, 1984; Huber, Weisser, & Luedtke, 2007). Stimulating the liver (or any other internal organ for that matter) while fasting is ill-advised and may interfere with the body’s natural healing process. A more practical use for the hot water bottle may be placing it at one’s feet, which sometimes get cold when fasting.

Breathing Exercises

Breathing exercises, sometimes called “breathwork,” have been used to heighten the fasting experience for thousands of years in traditional Chinese medicine (Reid, 1989) and Hinduism (Denton, 2004). Yogic breathing, or natural breathing, is the basis of practicing yoga (Strom, 2010).

Proponents claim that breathing exercises during a fast can help to increase metabolism and induce relaxation (de Toledo & Hohler, 2000).

According to Steve Meyerowitz (1999), “With only ten or fifteen minutes of yoga breathing per day, you can distinctly influence your detoxification and overall health” (p. 78).

The use of breathing exercises as therapy has been well-researched for a wide variety of medical and psychiatric disorders (Brown & Gerbarg, 2009; Holloway & Ram, 2004; Kigin, 1990; Posadzki, Parekh, & Glass, 2010; Weil, 2004). The most commonly noted benefits are stress reduction, increased oxygen flow to the brain, and improvement of mood.

There is a significant range in the intensity of different breathing methods, and many types, such as Kundalini yoga breathing techniques, are probably best avoided when fasting. A number of spiritual practices, such as Taoism and Buddhism, have rigorous breathing practices during fasting (Olson, 2005; Reid, 1989). The Buddha regularly practiced deep breathing exercises while fasting to the point that he experienced severe headaches, fever, and intestinal problems (Olson, 2005).

Massage Therapy

Massage therapy consists of manipulating the superficial and deeper layers of muscle and connective tissue using various techniques to improve health and function, aid in the healing process, and promote relaxation and well-being (Robertshawe, 2007).

Massage therapy and other types of body work have a long history of being used during fasting. In Ayurvedic medicine, which dates back thousands of years, fasting has been recommended prior to getting an oil massage (Govindan, 2000). Mohandas Gandhi, who fasted regularly, received massages daily to alleviate muscle soreness (Rogers, 1976).

Massage therapy can be useful during a fast to help with relaxation and stiffness. However, aggressive types of body work, such as Rolfing, deep tissue, and sports massage, are best avoided during a fast. Many fasting retreats and clinics offer daily massage for participants who are juice, water, or dry fasting (de Toledo & Hohler, 2000; Koyfman, 2012; Sivananda, 2012; Tanglewood, 2010).

The benefits of massage therapy have been well-researched (Lim, Anantharaman, Teo, Goh, & Tan, 1998; Robertshawe, 2007; Silva, Schalock, Ayres, Bunse, & Budden, 2009). The difficulty in evaluating the studies examining massage is due to the large number of diverse techniques used and the vast differences in the subject’s health. For example, one study examined sinus massage (Lim et al., 1998), while another evaluated massage for osteoarthritis of the knee (Robertshawe, 2007), and yet another studied the effects of massage on autism (Silva et al., 2009). Furthermore, there are over 80 different recognized massage modalities (NCCAM, 2011). Because a patient can be particularly vulnerable when fasting, it is important that the massage therapist be properly trained.

Meditation

Meditation is a practice of focusing on a sound, object, visualization, breath, movement, or attention itself in order to increase awareness of the present moment and enhance personal and spiritual growth (Davich, 2004).

The practice of meditation is commonly combined with fasting, as has been demonstrated by numerous historical figures, including the Buddha (Alder, 2000), Gandhi (Brown & Boersema, 2006), Jesus (Keim, 2010/1876), Mahavira (Osho, 1973), Moses (Chambers & Chambers, 1865), and Muhammad (Drury, 2006). Meditation has been practiced within religious traditions since ancient times, especially within monastic centers.

In traditional Chinese medicine, fasting is an important feature of meditation, particularly in the practices of Qigong and Tai Chi (Field, 2011; Reid, 1989). In his book *Chinese Traditional Meditation: Calm and Moving,* Weimin Kwauk (2007) said, “Fasting may be triggered by meditation naturally, or it can be started intentionally by yourself. The skill of controlling the timing will be learned as part of your meditation practice” (p. 33).

Meditation can be beneficial during fasting for inducing relaxation and reducing stress. A number of fasting retreats incorporate meditation into their programs (American Yogini, 2011; Ananda Marga Fasting Retreats, 2009; Atsumi Healing International, 2008; Moinhos Velhos, 2010; Siddhayatan Spiritual Retreat Center, 2011).

Although there has been an extraordinary amount of research on meditation—approximately 3,000 studies since the 1950s—reviewers have cited multiple flaws in these studies (Canter & Ernst, 2004; Ospina et al., 2008; Sedlmeier at al., 2012). The National Institutes of Health (NIH) has funded a number of reviews of meditation studies. These reports have also found problems with the research, but have also suggested that mediation has numerous psychological health benefits (NCCAM, 2012). In 2004, a review of 82 identified studies concluded, “The results support the safety and potential efficacy of meditative practices for treating certain illnesses, particularly in nonpsychotic mood and anxiety disorders. Clear and reproducible evidence supporting efficacy from large, methodologically sound studies is lacking” (Arias, Steinberg, Banga, & Trestman, 2006, p. 817).

Mindfulness-based meditation has become popular within Western medicine and some Buddhist psychologists advocate fasting as part of a meditative practice (Grossman, Niemann, Schmidt, & Walach, 2004; Kornfield, 2001).

Exercise

Whether or not to exercise during a fast is yet another controversy. Some experts have called for complete bed rest, while others suggested taking in a game of golf.

In a magazine article in the January 1976 issue of the magazine *Cosmopolitan,* Alan Cott recommended water-only fasting for weight loss and suggested that exercise could accelerate the process. In addition to taking daily 3-hour walks, Cott advised that golf, bowling, or bicycling would be beneficial during the first few days of the fast (Cott, 1976). Interestingly, journalist Upton Sinclair wrote on article on fasting for *Cosmopolitan* in 1910 and discussed his experiences with fasting, including his three fasts that totaled thirty days (Sinclair, 1911). In 1911, Sinclair published *The Fasting Cure* in which he recommended nothing stronger than light reading during a fast.

Natural hygienists in the Herbert Shelton tradition of water-only fasting insist that all fasters have complete bed rest, with no books, no television, or other distractions (Moser, 2006). Alec Burton, in several of his recorded talks on fasting, suggests gentle walking for a few minutes each day of the fast. This being said, simple movement and gentle physical activity while fasting can be helpful in maintaining muscle performance, including the heart. Beyond this, physical exertion defeats the purpose of calling for complete rest.

In their book, *The Pleasure Trap: Mastering the Hidden Force That Undermines Health & Happiness,* Douglas J. Lisle and Alan Goldhamer (2006) said, “Together, water-only fasting and resting are important instincts that guide behavior toward optimizing the healing response” (p. 180).

Some fasting retreats call for significant physical activity, but these programs are usually associated with juice fasting (de Toledo & Hohler, 2000). These facilities are known to incorporate yoga, Tai Chi, Qigong, and long walks (American Yogini, 2011; Ananda Marga Fasting Retreats, 2009; Atsumi Healing International, 2008; de Toledo & Hohler, 2000; Moinhos Velhos, 2010; Siddhayatan Spiritual Retreat Center, 2011).

Supportive Therapies

Other therapies that may be helpful during fasting are chiropractic care, intravenous therapy, balneotherapy, prayer, expressive writing, and psychotherapy. Chiropractic care can help relieve pain and improve sleep quality. In some instances, a psychotherapy session may assist in reducing anxiety that is interfering with an individual's ability to experience complete rest. Additionally, information that is gleaned during a psychotherapy session may reveal psychopathology which in turn might indicate that the fast should be broken.

Breaking a Fast

The introduction of food after a fast is approached in different manners and depends on various protocols. Under all circumstances, great care needs to be taken when breaking a fast in order to avoid complications such as refeeding syndrome, a condition consisting of metabolic disturbances that occur as a result of reinstitution of nutrition to patients who are severely malnourished (Crook, Hally, & Panteli, 2001).

The fast is usually broken in stages, such as starting with fresh organic vegetable juice the first day and then progressing to fruit and vegetables the next day (Cott, 1975; Fuhrman, 1995; Korbonits, Blaine, Elia, & Powell-Tuck, 2005; Ryan, 2005; Shelton, 1974).

Experts in the area of fasting have often learned from the experience and guidance of others. Mohandas Gandhi said he became educated about the procedures of breaking a fast from Jivraj Mehta, a physician he met while on a trip to London. According to Gandhi,

> It was there I learned that a man emerging from a long fast should not be in a hurry to regain his strength, and should also put a curb on his appetite. More caution and perhaps more restraint are necessary in breaking a fast than in keeping it. (as cited in Gandhi & Narayan, 1968, p. 516)

Over the course of his prolific writing on fasting, Herbert Shelton told numerous stories of people in distress because they broke a fast improperly. One such story involved a naturopath who simultaneously broke the fasts of two of his patients with chocolate, necessitating an emergency consult with Shelton. Shelton said it "required four to five days of fasting to get them back into a comfortable position" (Shelton, 1934, p. 165).

Shelton (1934) noted that the protocol for breaking a fast is different for each person depending on individual needs: "The care that must be exercised in breaking a fast is in proportion to the length of the fast and to the general condition of the fasting individual" (p. 166). For example, a person who has fasted to lose weight needs to be careful during and after refeeding if they are to maintain the weight loss. During the fast, metabolism slows considerably and can take 4 to 6 weeks to normalize depending on the length of the fast itself (Fuhrman, 1995). Not surprisingly, eating too much food too quickly after fasting can cause weight gain. Sumo wrestlers who traditionally weighed as much as 400 pounds, fast for brief periods and then eat large quantities of food to gain weight quickly (Yui, 2010). Joel Fuhrman (1995) pointed out that fasting to lose weight is ultimately ineffective unless the individual makes permanent dietary changes. In many cases, it can be helpful to make such dietary changes prior to fasting. This can make both the fast and the recovery period easier.

The body undergoes several distinct biological changes during a fast. The production of enzymes in the digestive tract decreases during the fast and takes time to re-establish afterward (Fuhrman, 1995). Furthermore, the protective mucous lining of the stomach diminishes during fasting, making the stomach more vulnerable to irritation after a fast from certain foods. Substances known to be irritating to the system, such as coffee, ginger, pepper, lemon, tomato, onion, garlic, and other spicy or highly acidic foods should be avoided in the early stages of refeeding. This is another reason why supervision is recommended, particularly for first time fasters. Eating the wrong foods after a fast can have disastrous gastrointestinal consequences and may even negate the beneficial effects that the fast achieved.

Research has indicated that losing weight is a common reason why people fast. Indeed, fasting has successfully been used as a treatment for obesity for over one hundred years (Fredricks, 2011). People who are obese tend to have a higher incidence of gastrointestinal problems, such as irritable bowel syndrome (Hall & Crowe, 2011), diverticulosis (Jansen, Harenberg, Grenda, & Elsing, 2009), and Crohn's disease (Mendall, Gunasekera, John, & Kumar, 2011). This can contribute to the sensitive digestive systems among this population. Due to this, some physicians recommend eating steamed vegetables in the days that immediately proceed the fast for people who are obese (Fuhrman, 1995).

A significant number of people who have bariatric surgery go on to experience problems with food addiction, so it seems reasonable to assume that an individual who is fasting to lose weight may encounter the same challenges (Saules et al., 2011). While some research has shown that people tend to overeat after a fast (Carrington, 1996/1953; Fleming, 1909; Macfadden & Oswald, 1900), other studies have found that not to be the case (Levitsky & DeRosimo, 2010). Research has shown that most people tend to think about eating frequently when deprived of food (Keys, Brozek, Henschel, Mickelsen, & Taylor, 1950). Psychotherapy is highly recommended for people who have previously overeaten to make sure that any problems with food do not transfer to other areas. When individuals are fasting to lose weight, it may be advisable for them to receive psychotherapy before the fast to prevent many of these pitfalls, including overeating and addiction transfer.

Some of the best advice for someone who uses fasting as a means to lose weight came from Garfield G. Duncan (1963), an authority on the subject, “Like major surgery or the use of potent drugs, [total fasts] are to be employed with a high degree of selection and never without close and qualified supervision” (p. 35).

Refeeding Syndrome

Supervision while fasting is particularly important for people who plan to fast for an extended period or those with certain health problems. As discussed earlier, improper refeeding can cause a condition known as Refeeding Syndrome (RS). RS has been described as “a complex and adverse body response that occurs with the initiation of nutrition after an extended period of starvation” (Lauts, 2005, p. 337).

RS is a risk that is often associated with people who have been receiving inadequate nutrition for a prolonged period (Crook, Hally, & Panteli, 2001). It often is discussed in connection with patients who have been tube feeding or have had difficulties chewing or swallowing. However, anyone in a state of malnutrition, which can occur after a prolonged fast, is at risk of developing RS when they resume normal nutrition.

The classic study describing RS was conducted in 1944 on male conscientious objectors of World War II (Keys et al., 1950). The participants in the study had undergone semistarvation for 6 months and upon nutrition replenishment, some subjects developed cardiac failure. Hisham Mehanna, Jamil Moledina, and Jane Travis (2008) listed the following types of patients as being at higher risk of developing RS:

- Patients with anorexia nervosa
- Patients with chronic alcoholism
- Oncology patients
- Postoperative patients
- Elderly patients (comorbidities, decreased physiological reserve)
- Patients with uncontrolled diabetes mellitus (electrolyte depletion, diuresis)
- Patients with chronic malnutrition:
    - Marasmus
    - Kwashiorkor
    - Prolonged fasting or low energy diet
    - Morbid obesity with profound weight loss
    - High stress patient unfed for >7 days
    - Malabsorption syndrome (such as inflammatory bowel disease, chronic pancreatitis, cystic fibrosis, short bowel syndrome)
- Long term users of antacids (magnesium and aluminum salts bind phosphate)
- Long term users of diuretics (loss of electrolytes) (p. 1496)

RS occurs during refeeding when the ingestion of large amounts of carbohydrates after malnourishment causes a severe imbalance in potassium, phosphorus, and magnesium (Lauts, 2005). The rapid change in electrolytes results in a reduction in the excretion of salt and water, thereby precipitating a fluid overload that can cause heart and lung complications and even death (Kraft, Btaiche, & Sacks, 2005).

In supervised therapeutic fasting, a patient is evaluated for malnutrition, nutrient deficiencies, and the risk of developing RS. In cases of high risk, the health care professionals might administer specific amounts of carbohydrates, other nutrients, and/or a special diet prior to the fast in order to reduce the risk of developing RS. Additionally, electrolytes would be closely monitored during the fast, a procedure which is generally followed by most fasting supervisors regardless of the patient’s risk of RS. Because of this, therapeutic fasting protocols of the IAHP virtually eliminate the risk of RS (IAHP, 1995).

RS is detected by doing biochemical testing of the levels of specific electrolyte and minerals (Mehanna, Moledina, & Travis, 2008). If the syndrome is identified, the rate of refeeding is slowed down and essential electrolytes are replenished. In a hospital setting, a team of dietetic specialists are usually involved.

Signs of RS are mostly related to fluid retention and sudden weight gain, particularly around the ankles and other joints (Mehanna et al., 2008). Because RS can be fatal, someone who is exhibiting these signs after resuming normal eating post-fast should consult a doctor immediately. Additionally, anyone who suspects they are at risk for RS should consult with a physician before attempting a fast of any length.

Conclusion

The most critical considerations in planning a fast are the environment, the length of the fast, and how it will be broken. Before you begin a fast, take some time to write down your goals and expectations. Journaling can help you to explore your thoughts and consider how you will react to physical, emotional, and spiritual events during the fast. Create a plan of action which will help you succeed, whether it is centered in mindfulness practices, such as meditation and prayer, or simple movements, such as yoga and walking. If it is your first time fasting, consult with a doctor and a psychotherapist to make sure you are healthy enough and emotionally prepared. As with most significant endeavors, having a plan will increase the chances of achieving a satisfactory outcome.

3

The Physiological Process of Fasting

> The job of fasting is to supply the body with the ideal environment to accomplish its work of healing.
>
> —JOEL FUHRMAN (1995, p. 14)

Regardless of the purpose of a water-only fast, the physiological process is the same. The body spares important tissues, such as vital organs, while using nonessential tissue such as fat, muscle, and enzymes for fuel (Cridland, 1986; Salloum, 1999). However, the degree to which essential tissue is utilized by the body during a fast is dependent on a number of factors, primarily the person’s weight, percentage of muscle and fat, activity level during the fast, and the length of the fast (Fuhrman, 1995). This is why people who fast should be supervised by a clinician or doctor to ensure that the length of their fast is appropriate for their health.

An understanding of the physiology of fasting is essential to the appreciation of its transformational nature. According to Andrew Weil (2004),

> Fasting owes its effectiveness to a basic fact of physiology. The digestive organs are the largest and bulkiest in the body, and their routine operations consume large amounts of energy. The simple act of not eating rests this system and frees up much of that energy for the body to use in healing. (p. 14)

Some researchers use the terms “fasting” and “starvation” interchangeably, but this use is inaccurate. Starvation is a process in which the body uses essential tissues for fuel, especially protein as a major fuel source (Keys, Brozek, Henschel, Mickelsen, & Taylor, 1950). Starvation is the most extreme form of malnutrition. In humans, prolonged starvation can cause permanent organ damage and death.

In contrast, therapeutic fasting includes monitoring the patient's vital signs throughout the fast, significantly reducing the chances of any complications. In order to avoid starvation, a fast must be terminated at the appropriate time, determined by an individual's fat stores, metabolism, stress, and activity.

As the fast progresses, the body uses fat for fuel (Goodman et al., 1980). The body sends a message to the faster in the form of hunger when fat levels run low; below 7% and 10% of body weight for males and females, respectively. Therapeutic fasts are usually broken before these levels of body fat are achieved. However, it is worth noting that some males have levels of body fat below 7% before the fast begins. If the fast is not broken when body fats run extremely low, starvation begins to occur, as the body begins to use greater amounts of protein for fuel. Health complications that are associated with fast-induced starvation include electrolyte imbalances, thinning hair, lanugo (the growth of fine, downy hair on body), cardiac arrhythmias, and renal failure (Cahill, 1976; Keys et al., 1950). Death will eventually occur if fasting is pursued to the point of complete starvation.

Another significant distinction between starvation and fasting is that a person who is starving is usually not doing so voluntary. A person who is fasting has made a decision not to eat for a period of time because of a specific reason. There are exceptions to this, the most notably being cases of anorexia nervosa.

Fasting Versus Calorie Restriction

Another important distinction is the difference between water-only fasting and calorie restriction. Water-only fasting is the complete abstinence from all substances except pure water whereas calorie restriction is a restricted diet in which an individual consumes less calories or different foods than s/he usually consumes. This difference becomes important when examining the literature on fasting because some researchers use fasting and calorie restriction intermittently as a treatment protocol. Additionally, the physiological mechanisms that cause spontaneous healing during a water-only fast may not occur during calorie restriction (Salloum, 1999).

Consumption of Purified Water During Water-Only Fasting

According to the International Association of Hygienic Physicians (IAHP), the fasting participant should consume only pure water (such as water that is *distilled, filtered,* or *reverse osmosis)* in order to experience the complete physiological effects of the fast (IAHP, 1995). There is no scientific evidence that distilled, filtered, or reverse osmosis water is better for fasting patients compared to other types of water, such as tap water. However, a literature review reveals a long-standing practice among IAHP practitioners of recommending distilled, filtered, or reverse osmosis water that dates back to the 1930s (Fuhrman, 1995; Michalsen et al., 2002; Murray, & Pizzorno, 1997; Salloum, 1999; Shelton, 1978/1934). The reasoning behind the recommendation of purified water is that it is thought to have fewer contaminants than tap water. In addition, because of its variable mineral content, the IAHP does not recommend the use of natural spring water. In general, vitamins and mineral supplements are not administered during water-only fasting by IAHP practitioners, because they believe that it interferes with the body’s natural healing response (Fuhrman, 1995; Michalsen et al., 2002).

Another area in question is what quantity of water should be consumed daily during a water-only fast. Alan Cott (1975) said that someone water-only fasting should “drink at least two quarts of water every day of the fast, but there is no limit to the amount of water you may drink” (p. 41). However, drinking too much water will eventually dilute the blood and result in electrolyte imbalances (Dennis et al., 2010). Jack Goldstein (1979) explained how drinking too much water during fasting could be harmful:

> Setting a goal of two quarts of water or more a day is not in harmony with normal physiology. In fact, it is a forcing measure which may cause a mineral imbalance (depletion) from too much flushing of the system with water. Nothing should be forced, whether fasting or not. (p. 203)

According to Joel Fuhrman (1995), fasters should drink at least one quart of water per day and even more if they are still thirsty. Based on these recommendations, the amount of water that each person needs during a fast will most likely vary depending on overall health, weight, and gender, as well as other variables.

Some people drink only juice (known as *juice fasting)* and believe they are fasting. In actuality, this is a restricted diet, in view of the fact that juice is a food which contains carbohydrates (Shelton, 1974). The consumption of carbohydrates inhibits the body’s conversion to the ketotic metabolism that occurs naturally during a fast (Shelton, 1978). According to Salloum (1999),

> In most cases, the fast is superior to the restricted diet: hunger almost totally disappears; ketosis occurs more quickly and efficiently; famine edema does not occur; sodium diuresis is more pronounced; weight loss is more dramatic and is from fat rather than protein stores, healing time is shorter; and patient strength may be greater. (p. 408)

Phases of Fasting

Whether fasting is performed for medical, psychological, or spiritual reasons, the physiological changes that happen during a fast represent a major part of the transformational aspect of fasting.

During the first three days of a fast, the body converts from one fuel source to another; a state called *ketosis* (Salloum, 1999). Ketosis is a process in which glucose is replaced with ketones (Veech, Chance, Kashiwaya, Lardy, & Cahill, 2001). In response to fasting, the liver produces ketones for the body to use as fuel, which significantly limits muscle wasting. According to Veech (2004), “The effects of ketone body metabolism suggests that mild ketosis may offer therapeutic potential in a variety of different common and rare disease states” (p. 309). For females, ketosis typically develops within 48 hours of fasting, and typically within 72 hours for males (Fuhrman, 1995).

In order to better understand the process of ketosis, it may be useful to examine the three phases of water-only fasting that have been identified through clinical examinations.

Phase One. Phase one is the gastrointestinal phase, which lasts approximately six hours following the last meal. Glucose is the body’s primary fuel source and is essential for brain and central nervous system functions. When denied glucose for beyond 4 to 8 hours, the body turns to the liver for glycogen, a stored form of glucose, to be used for fuel (Ghanaat & Tayek, 2005).

During the first phase, the body uses glucose for fuel as well as amino acids and fats that are in the intestinal tract (Goldhamer, 1987). Approximately 25% of the body's glucose consumption occurs in the brain, which is more than any other organ (Milivojevic & Retelny, 2011). Additionally, fasting for as little as several hours can cause the release of environmental toxins that were stored in adipose cells (Chevrier et al., 2000; Imbeault et al., 2002).

Phase Two. Phase two is a period in which the body uses glycogen reserves that are stored in the muscle and liver cells to provide for the central nervous system, including the brain (Cahill, 1976; Newman, Korol, & Gold, 2011). Most of the glycogen stores are depleted during the first day of the fast (Fuhrman, 1995). After the glycogen reserve is used up, glucose can be obtained from the breakdown of fats (Zechner, Kienesberger, Haemmerle, Zimmermann, & Lass, 2009). A significant drop in the metabolic rate can occur as quickly as within the first 48 hours of fasting (Weyer, Vozarova, Ravussin, & Tataranni, 2001). Phase 2 lasts for approximately two days (Goldhamer, 1987).

Phase Three. During phase three, the body switches from primarily using glucose as a fuel source to using fats as the main fuel source. This ultimately prevents the body's protein reserves from being depleted. Within ten hours from the last meal, approximately 50% of fuel used by the body comes from fat (Goldhamer, 1987). Metabolism of protein reserves decreases from around 70 grams per day at the beginning of a fast to 20 grams per day by the end of the second week (Goldhamer, 1987; Cahill & Veech, 2003). Eventually, the brain shifts from using glucose as its primary fuel source to using keotones as its primary source, an event that only occurs in prolonged water-only fasting (Lisle & Goldhamer, 2006).

Autophagy and Fasting

The third phase described above is often followed by a normalization period marked by a feeling of increased well-being (Goldberg, Anderson, & Trivieri, 1994). This period is usually accompanied by a vast improvement in energy, clarity of mind, and a heightened sense of contentment (Goldberg et al., 1994; Porter & Callahan, 1998). Of course, the experiences people have during fasting vary enormously depending on a number of factors, such as their overall health and pre-fast weight. According to Stephen Harrod Buhner (2003), this period represents a time of healing and detoxification:

> As part of protein conservation, the body also begins seeking out all non-body-protein sources of fuel: nonessential cellular masses such as fibroid tumors and degenerative tissues, bacteria, viruses, or any other compounds in the body that can be used for fuel. This is part of the reason that fasting produces the kind of health effects it does. 3)

The process that Buhner referred to is called *autophagy,* a catabolic process involving the degradation of a cell's own components through the lysosomal machinery (Goldman, Taylor, Zhang, & Jin, 2010). Autophagy, which is ongoing in nucleated cells, is typically activated by fasting and nutrient deprivation (Arstila & Trump, 1969). Liver autophagy is suppressed by insulin and enhanced by glucagon (Mortimore & Poso, 1987). During fasting, autophagy generates amino acids which fuel the tricarboxylic cycle and helps to maintain adenosine triphosphate (ATP) energy production (Arstila & Trump, 1968). It is worth noting that both insufficient and excessive autophagy can promote cell injury and that appropriate regulation of autophagy is essential for cellular well-being (Levine & Yuan, 2005).

Autophagy is sometimes referred to as *cellular cleansing* (Alirezaei et al., 2010). Research has suggested that autophagy can potentially rejuvenate an organism and prevent certain types of disorders, such as cancer and heart disease through autolytic cell destruction (Fong et al., 2012; Levine & Kroemer, 2008; Yorimitsu & Klionsky, 2005).

Autophagic dysregulation appears to occur in the most common forms of dementia; Alzheimer's disease, dementia with Lewy bodies, frontotemporal dementia, vascular dementia, and HIV-associated neurocognitive disorders (Kragh, Ubhi, Wyss-Corey, & Masliah, 2012). Autophagic dysregulation has also been implicated in Parkinson's disease and Huntington's disease (La Spada, 2012; Yang & Mao, 2010). This has led researchers to suggest that autophagy plays an important role in the prevention of these conditions.

In the article *Autophagy in the Pathogenesis of Disease,* Beth Levine and Guido Kroemer (2008) described the relationship between fasting and autophagy as follows:

> Fasting has been an integral part of health and healing practices throughout the recorded history of mankind. This ancient tradition may be partially rooted in a cellular process we are now beginning to understand in modern scientific terms. One of the most evolutionarily conserved cellular responses to organismal fasting is the activation of the lysosomal degradation pathway of autophagy, a process in which the cell self-digests its own components. This self-digestion not only provides nutrients to maintain vital cellular functions during fasting but also can rid the cell of superfluous or damaged organelles, misfolded proteins, and invading micro-organisms. Interestingly, self-digestion by autophagy—a process that is potently triggered by fasting—is now emerging as a central biological pathway that functions to promote health and longevity. (p. 27)

Mark Carney (2010), a naturopath who specializes in therapeutic fasting, discussed the significance of autophagy during a fast. According to Carney (2010), “Fasting is one well-recognized way of inducing autophagy and favors the catabolism of ancillary tissues over important tissues” (p. 7). Carney pointed out how nonessential tissue, such as cysts, fibroids, arterial plaques, blood clots, and scar tissue, can be metabolized during a fast so that more valuable tissue can be spared.

Joel Fuhrman (1995) asserted fasting produces profound effects on a cellular level, assisting in clearing cellular waste. One of the primary ways this happens during a fast is through the process of modulating free radical production.

In a 2010 study, researchers found that short-term fasting can induce profound neuronal autophagy (Alirezaei et al., 2010). The authors concluded that “disruption of autophagy can cause neurodegenerative disease, and the converse also may hold true: upregulation of autophagy may have a neuroprotective effect” (p. 708). Other research has suggested that fasting’s neuroprotective effect may also be from the restriction of glucose (Anson et al., 2003). For a more detailed discussion about the neurobiological changes that occur during fasting, refer to chapter seven and the section on fasting and altered states of consciousness.

A 2008 study found that fasting male rats for 24 hours (but not 48 hours) after a hit on the head to simulate brain injury from a traumatic accident resulted in less brain damage (Davis, Pauly, Readnower, Rho, & Sullivan, 2008). The 24-hour fast decreased oxidative stress and calcium loading and increased oxidative phosphorylation in the mitochondria. Other research has suggested that fasting may help prevent a stoke and may help with the recovery after a stroke (Lin, Te, Huang, Chi, & Hsu, 1997).

Researchers found that every-other-day fasting helped mice recover from a thoracic contusion spinal cord injury (SCI) (Jeong et al., 2011). The study reported that alternating periods of fasting promoted a significant improvement in hindlimb locomotion in two different injury models involving thoracic and cervical contusions. The researchers concluded, “These observations suggest that intermittent fasting might be a potential treatment strategy after acute SCI, that could improve the quality of life in individuals with SCI” (p. 480).

A 2012 study found that fasting reduced atherosclerosis and heart attacks by increasing autophagy (Razani, et al., 2012). According to the researchers, fasting ramped up the cellular digestion process, recycling proteins and helped to rid the body of cellular waste. A key component of atherosclerosis is chronic inflammation in the arterial walls, caused mainly by the accumulation of specific white blood cells called macrophages. It is in those macrophages where autophagy causes cellular degradation.

Other Physiological Changes During Fasting

There are other significant physiological changes that occur during fasting that are worth noting. These include several hormonal changes, including a fall in insulin and triiodothyronine levels and a rise in glucagon (Kerndt, Naughton, Driscoll, & Loxterkamp, 1982). During the first few days of a fast, levels of epinephrine, norepinephrine, and cortisol increase (Bergendahl, Iranmanesh, Pastor, Evans, & Veldhuis, 2000; Chennaoui et al., 2009).

Other physiological changes that have been noted in fasting research include changes in gene expression (Bouwens, Afman, & Muller, 2007; Ding, Lichti, Kim, Gonzalez, & Staudinger, 2006; Kersten et al., 1999; Pilegaard, Saltin, & Neufer, 2003; Spriet et al., 2004; Tsintzas et al., 2006; Van der Lee et al., 2001). In a Dutch study, researchers found that the cardiac expression of gene coding for glucose-handling proteins was up to 70% lower in rats that were fasting (Van der Lee et al., 2001). In a 2007 study with human participants, the researchers noted a significant improvement: “After 24 and 48 h of fasting, 1200 and 1386 genes were changed >1.4-fold, respectively. Many of those genes were involved in fatty acid B-oxidation and are known PPARa target genes” (Bouwens et al., 2007, p. 1515). This body of research revealed the potential that fasting has in the area of genetic expression, nutrition, and overall health.

In 2008, researchers led by Benjamin Horne at the Intermountain Heart Collaborative found a significant rise in levels of human growth hormone (HGH). During 24-hour fasting periods, HGH increased an average of 1,300% in women, and nearly 2,000% in men. HGH has been reported to have a wide array of beneficial effects, from reducing obesity to reversing aging, and many body-builders take HGH to build muscle (Horne et al., 2008).

According to Alan Goldhamer, some of the beneficial physiological changes that occur during fasting include weight loss, neuroadaptation to a low salt diet, enzymatic recalibration, improved insulin resistance, natriuresis (excretion of sodium), reduced gut leakage, and sympathictonia (decreased tone of the sympathetic nervous system) (Goldhamer, 2003).

Fasting and Famine Influence Sex Ratios

Sex ratio is the ratio of males to females in a given population. The human sex ratio is of particular interest to anthropologists and demographers, who have noted a minor imbalance in that there is an overall tendency worldwide towards females. Researchers have noted that extreme environmental and physiological conditions, such as fasting and famine, can influence sex ratio in humans.

In 1957, China’s Mao Zedong proposed the “Great Leap Forward,” a campaign that was supposed to increase steel production and propel his country into the upper ranks of industrialized nations. But as Chinese leaders rushed to find ways to make more steel, grain production fell, famine set in, and 30 million people died. Researchers discovered that the 3-year famine also had demographic consequences: A significantly higher proportion of girls were born after the famine than in the years leading up to it (Song, 2012).

Other research has found that even short-term fasting can influence sex ratios. Douglas Almond and Bhashkar Mazumder (2008) analyzed women who fasted during Ramadan and found that babies who were conceived close to the time of the fast have a significantly higher female-biased sex ratio. The researchers noted that fasting had an immediate effect and concluded that sex ratios respond to maternal condition, nutrition being a primary factor.

Conclusion

There is a school of thought that postulates that all fasting has a spiritual component because of the meditative qualities of the fasting state (Brown & Boersema, 2006). Even in therapeutic fasting performed at a clinic, the patient has some degree of meditative phenomenon due to the experience of being in a complete resting state (Allan, 2002). According to Douglas J. Lisle and Alan Goldhamer (2006),

> We have the innate capacity for prolonged water-only fasting. This capacity, which requires complex body machinery, did not “just happen” any more than our eyes and ears “just happen” to be part of our design. Such complex design is irrefutable evidence that our ancestors slowly evolved sophisticated, reliable machinery for managing caloric deprivation. (p. 184)

The avoidance of stressful situations while fasting can play a supporting role by facilitating the body’s natural physiological processes. In addition, fasting in a restful environment can help the participant avoid harmful physiological and psychological responses that are associated with negative stressors.

4

Research on Fasting in Medicine

Whether fasting is used in the transition to a healthful diet and lifestyle, to overcome the signs and symptoms of disease, or as a preventive measure,
it is a powerful tool for helping sick people to get well
and healthy people to stay healthy.

—ALAN GOLDHAMER (1995, H 9)

Fasting is one of the oldest known medical therapies, dating back to the Stone Age (Goscienski, 2005). In ancient times, physicians recommended fasting for the treatment and prevention of disease (Tsuji, 2011). Egyptians believed that fasting preserved their health and prolonged life. They resolved syphilis with fasting and thought that youthfulness could be preserved by fasting for three days out of every month (Steiger & Steiger, 2004). An inscription on a 5000-year-old Egyptian pyramid reads, “Man lives on one quarter of what he eats, on the other three quarters, his doctor lives” (as cited in Cousens, 2000, p. 532).

The Greek physician Hippocrates believed fasting assisted the body in healing itself (Fischetto, 2004). Hippocrates prescribed fasting during the critical periods of disease, and said, “Our food should be our medicine. Our medicine should be our food. But to eat when you are sick, is to feed your sickness” (as cited in Williams, 2005, p. 15). Physicians Thessalus and Asclepiades also used fasting to treat their patients (DeVries, 1958). Paracelsus, another Greek doctor in the Western tradition, said, “Fasting is the greatest remedy; the physician within” (as cited in Bragg & Bragg, 2004, p. 29). According to Joel Fuhrman (1995), a medical doctor and author of *Fasting and Eating for Health: A Medical Doctor’s Program for Conquering Disease,*

> The famous Hippocratic Oath, familiar to every physician, admonishes us to “First do no harm,” recognizing that the most important foundation of healing the sick, even today, is the remarkable recuperative power inherent in the human body. This power of self-repair is beautifully witnessed during the fast. (p. 17)

Fuhrman successfully used fasting to treat patients with an array of problems, including angina, fibromyalgia, glaucoma, acne, vertigo, cervical dysplasia, benign tumors, uterine fibroids, and deafness.

Fasting in the Treatment of Disease

Medical doctors in the United States began prescribing water-only fasting in the early 1800s (Salloum, 1999). Medical journals first published articles about fasting around 1880 (Fuhrman, 1995). Since then, researchers have found fasting useful in the treatment of the following diseases and conditions:

1. Arthritis (Kjeldsen-Kragh et al., 1991; Kroker et al., 1984; Seignalet, 1992; Skoldstam, Larsson, & Lindstrom, 1979; Skoldstam & Magnusson, 1991; Sundqvist at al., 1982; Trollmo, Verdrengh, & Tarkowski, 1997; Uden, Trang, Venizelos, & Palmblad, 1983).
2. Asthma (Dzhugostran, Niamtsu, Zlepka, & Marchenko, 1991; Erkekol et al., 2006; Gembitskaya, Korovina, Khlopotovag, Lifshits, & Yefremova, 2001; Gorbachev, Sytyi, Sizova, Vasnev, & Boyarintseva, 1979; Kokosov, Osinin, & Faustova, 1991; Tovt-Korshyns’ka, Spivak, & Chopei, 2002).
3. Cancer (Johnson, John, & Laub, 2007; Lee & Longo, 2011; Raffaghello et al., 2008; Safdie et al., 2009; Siegel, Liu, Nepomuceno, & Gleicher, 1988; Varady et al., 2008).
4. Cardiovascular disease (Ahmed, Flynn, & Alpert, 2001; Duncan, 1963a; Duncan, 1963b; Horne et al., 2008; Merrill, 1964; Miettinen, 1962; Muliar, Mishchenko, Loban, Goncharenko, &
5. Bobyrev, 1984; Sorbris, Aly, Nilsson-Ehle, Petersson, & Ockerman, 1982; Suzuki, Yamauchi, Horikawa, & Yamagata, 1976).
6. Diabetes (Allen, 1915; Goldhamer et al., 2002; Guelpa, 1910; Gueris, Segrestaa, & Lamotte, 1969; McCarty, 1981; Schless & Duncan, 1966; Vessby, Boberg, Karlstrom, Lithell, & Werner, 1984).

7. Epilepsy (Geyelin, 1921; Guelpa & Marie, 1911; Hoeffel & Moriarty, 1924; Kerndt, Naughton, Driscoll, & Loxterkamp, 1982; Lennox & Cobb, 1928; McMurray, 1916).
8. Gastrointestinal disorders (Dmitriyev, 2001; Kanazawa & Fukudo, 2006; Navarro at al., 1984; Savendahl, Underwood, Haldeman, Ulshen, & Lund, 1997).
9. Hypertension (Beleslin, et al., 2007; Filipchenko & Rayeva, 2001; Goldhamer, Lisle, Parpia, Anderson, & Campbell, 2001; Goldhamer et al., 2002; Krotkiewski, Ruzyllo, & Kotowska, 1967; Murav'ev, Malishevskii, Makarova, & Andreeva, 2003).
10. Obesity (Bloom, 1959; Bloom, 1968; Cavagnini, Peracchi, & Porro, 1971; Dinning, 1963; Drenick, Swenseid, Blahd, & Tuttle, 1964; Duncan, Jenson, Cristofori, & Schless, 1963; Folin & Denis, 1915; Runcie, 1973; Runcie & Thomson, 1970; Spencer, 1968; Stewart & Fleming, 1973; Tewfik, 1968; Tewfik & Jain, 1967; Thomson, Runcie, & Miller, 1966; Wechsler, Wenzel, Swobodnik, & Ditschuneit, 1984).

Fasting and Hypertension

Garfield G. Duncan was a physician who began researching diabetes in the 1920s, and then nutrition in the 1940s (Duncan, 1926; Duncan, 1946). By the 1960s, Duncan was a professor of medicine at the University of Pennsylvania, where he began researching obesity (Duncan et al., 1963; Duncan, Hunscher, Cristofori, Duncan, & Schless, 1965; Duncan, Duncan, Schless, & Cristofori, 1965). Duncan routinely fasted his obese patients, noting vital statistics, such as blood pressure, and what percentage regained the weight that was lost during the fast. In his case studies, he noted that patients who were hypertensive experienced a significant decrease in blood pressure during fasting, often dropping to within normal limits (Duncan, 1963a; Duncan, 1963b).

For decades, other doctors noticed a drop in blood pressure in patients during water-only fasting (Fuhrman, 1995). However, it was not until the early 2000s that a study of significant magnitude was conducted demonstrating the effects of water-only fasting on hypertension.

In 2001, a team of researchers in Northern California conducted as 12-year study, during which they monitored 174 consecutive patients who were diagnosed with mild to severe high blood pressure. These patients were placed on a medically-supervised, water-only fast (Goldhamer et al., 2001). The study, funded in part by a grant from the National Health Association, discovered that by having patients fast, blood pressures rapidly normalized. A number of patients who started fasting while on antihypertensive drugs had to discontinue their medication in fear that their blood pressure would drop too low. At the termination of the fast, 154 of the patients were normotensive.

The treatment protocol included an average water-only fasting period of 10.6 days, followed by a supervised refeeding period of one week with a low-fat, low-sodium, vegan diet. The average reduction at the conclusion of treatment was 46 points systolic and 15 points diasystolic and the average exit blood pressure was 128 points systolic and 78 points diasystolic without the use of any medication.

In a second hypertension study by Goldhamer *et al.* (2002), 68 hypertensive patients were placed on water-only fasts for 4 to 40 days. Descriptive statistics, including standard deviations for the outcome variables of interest, were computed at three relevant time points. By the end of the fast, 82% of patients had a significant reduction in blood pressure. The final mean achieved (109/71) was similar to levels considered to be consistent with excellent health.

Fasting and Cardiovascular Diseases

Studies examining the effects of water-only fasting on patients with heart disease began in the 1960s with Garfield G. Duncan who noticed improvements in chronic cardiac disease (Duncan, 1963a; Duncan, 1963b). Researchers have found fasting beneficial in the treatment of a variety of cardiovascular issues, including improving arterial health, reducing triglycerides, atheromas, and total cholesterol, increasing HDL/cholesterol ratios, and alleviating congestive heart failure (Gresham, 1976; Horne et al., 2008; Immerman, 1980; Lawlor & Wells, 1969; Muliar et al., 1984; Sorbris et al., 1982; Suzuki et al., 1976; Vessby et al., 1984).

In a study by Horne *et al.* (2008), scientists evaluated the association of the religious preference of fasting with coronary artery disease (CAD). The researchers proposed that Mormons had a lower cardiac mortality rate because they routinely fasted for at least one day per month. The study evaluated potential CAD-associated effects of fasting using patients (n(1) = 4,629) enrolled in the Intermountain Heart Collaborative Study registry and another set of patients (n(2) = 448).

According to their report, “fasting was associated with lower risk of CAD (64% vs 76% CAD; OR 0.55, 95% confidence interval 0.35 to 0.87, *p* = 0.010), and this remained after adjustment for traditional risk factors (OR 0.46, 95% confidence interval 0.27 to 0.81, *p* = 0.007). Fasting was also associated with lower diabetes prevalence *(p* = 0.048)” (p. 814). As an observational study, this research was limited by the inability to assure that all potential confounding variables were fully controlled for.

The benefit of fasting in the prevention of the formation of a thrombus has been documented (Muliar et al., 1984) In one study, 22 healthy volunteers were fasted and their blood was analyzed. The study found that fasting reduced blood plasma and red cell coagulation, as well as the deterioration of platelet aggregation. Additionally, there was an increase in oxidized hemoglobin content and red cell resistance to peroxide hemolysis. The researchers concluded that fasting was an effective therapy for lowering the risk of intravascular coagulation and thrombus formation. Other research has found that after 36 hours of fasting, fibrinolysis (the breakdown of clots) increases significantly. This activity continued for 24 hours after the termination of the fast (Menon, 1967; Miettinen, 1962).

Fasting and Diabetes

The first physician to develop fasting protocols for treating diabetes was most likely G. Guelpa, a French physician. He detailed his experience in his 1912 book *Auto-Intoxication and Dis-Intoxication,* in which he discussed using fasting to treat diabetes and a variety of other conditions such as sciatica, obesity, pulmonary diseases, alcoholism, and melancholia (Guelpa & Arnold, 1912).

Guelpa had an interesting fasting regimen which included drinking Hunyadi János, a natural purgative mineral water drawn from Saxlehner’s Bitterwater Springs near Budapest, Hungary. Guelpa recommended the entire abstinence from food for three days, during which time the patient could drink water, weak tea, and one bottle of Hunyadi János daily (British Medical Journal, 1912). After the fast, Guelpa had patients drink milk for one week, followed by a second fast of three to four days. The second fast would be broken with coffee or tea for breakfast, and clear soup, salad, and apples or pears for lunch and dinner. This pattern of fasting is called “repeated fasting and refeeding.”

From 1915 until the discovery of insulin in 1922, American physicians Frederick Madison Allen and Elliott Proctor Joslin advocated water-only fasting as a treatment for diabetes based on the work of Guelpa (Mazur, 2011). Allen and Joslin treated primarily diabetic children and severely afflicted adults.

Elliott Proctor Joslin was the first doctor in the United States to specialize in diabetes and was the founder of the Joslin Diabetes Center, still in operation today (Feudtner, 2003). He was the first to advocate for teaching patients to care for their own diabetes, an approach now commonly referred to as Diabetes Self-Management Education. In 1908, in conjunction with physiologist Francis Gano Benedict, Joslin carried out extensive research examining the fasting and feeding of patients who had diabetes (Benedict & Joslin, 1910).

In 1919, Iowa-born physician Frederick Madison Allen began using fasting to prolong the lives of his diabetic patients (Bliss, 2007). In 1921, he opened the Physiatric Institute in Morristown, New Jersey, the world's first clinic for diabetic patients (The New York Times, 1921). By 1929, Allen had opened facilities in Rye, New York and Midtown Manhattan (The New York Times, 1929).

Allen recommended a strict fasting regimen for his diabetic patients based on the fasting principles set forth by R. T. Woodyatt at New York's Presbyterian Hospital (Medvei, 1993; Woodyatt, 1916). Allen authored several acclaimed textbooks on diabetes and conducted research at the Rockefeller Institute for Medical Research (Allen, 1913; Allen, 1915; Allen, 1922; Bliss, 2007). In his research, which was based entirely on case studies, Allen fasted dozens of children for one week or more (Mazur, 2011). His regimen, which became known as “The Allen Plan,” was often successful in treating the symptoms of diabetes, although a number of adults and children died during the therapy, most likely patients who had insulin-dependent diabetes (Mazur, 2011).

One of the best-known studies involving fasting occurred in the 1950s when Ancel Keys and colleagues from the University of Minnesota observed 32 volunteers who alternately fasted and endured severe calorie restriction over an 8-month period (Keys, Brozek, Henschel, Mickelsen, & Taylor, 1950). The researchers compared their findings with the observations of men that experienced food deprivation during the second World War. They found that fasting—as compared to food deprivation—did not cause vitamin or mineral deficiencies and that diabetes and skin diseases improved.

Fasting is a problem for individuals with insulin-dependent diabetes because they cannot break down the ketones that are produced during fasting and use them as fuel (Hoffer, 2005). In these patients, the ketones build up in the body and create highly acidic, damaging conditions. For this reason, insulin-dependent diabetics should not fast. However, therapeutic fasting has been found to improve the health in people with type II diabetes (Fuhrman, 1995; Goldhamer, 2002).

A number of studies from the 1960s to the 1980s concluded that diabetic patients who had been treated with water-only fasting demonstrated a substantial improvement in insulin function regardless of the amount of weight loss (Gueris et al., 1969; McCarty, 1981; Vessby et al., 1984). Additionally, there was a substantial restoration of pancreatic function, something that does not usually occur in weight loss alone. Complete remission was reported in a number of patients (Vessby et al., 1984).

In 1984, Scandinavian researchers found that treating obese type II diabetes patients with fasting and calorie restriction (200 calories per day) led to the normalization of blood glucose and the disappearance of urinary glucose (Vessby et al., 1984). Other findings included the reduction of fasting serum insulin concentrations by 54%, serum triglycerides by 65%, serum cholesterol by 28%, and high density lipoprotein by 14%. The researchers concluded that “Supplemented fasting appears to be a safe and useful tool in the treatment of obese type II diabetics” (p. 67).

Fasting as a Treatment for Obesity

Water-only fasting has been used extensively in the treatment of obesity (Fredricks, 2008). As a medical therapy for obesity, it was first advocated by doctors in 1915 (Folin & Denis, 1915). Starting around 1959, doctors began prescribing fasting as a routine treatment for obesity (Bloom, 1959; Bloom, 1968; Cavagnini et al., 1971; Dinning, 1963; Drenick et al., 1964; Duncan, 1963a; Duncan et al., 1963; Folin & Denis, 1915; Runcie, 1973; Runcie & Thomson, 1970; Spencer, 1968; Stewart & Fleming, 1973; Tewfik, 1968; Tewfik & Jain, 1967; Thomson et al., 1966; Wechsler at al., 1984). The principal limitations of these studies included that there were no control groups and many of the patients had serious medical conditions that were not fully controlled for.

One of the most successful case studies using fasting as a treatment for obesity was by Stewart and Fleming (1973), in which a 27-year-old male weighing 456 pounds fasted without complications for 382 days and lost a total of 276 pounds. The man, referred to as “Mr. A. B.” in a paper published in the *Postgraduate Medical Journal* in 1973, drank only water, but received a vitamin pill daily, potassium from day 93 to 162, and sodium from day 345 to 355. At first, he stayed at the university hospital, but after a time, he was allowed to go home and return daily for a urinalysis and to have his vital signs checked. Blood samples were taken every two weeks. Five years later, “Mr. A. B.” had only gained back 16 pounds (Stewart & Fleming, 1973).

A 2006 study published in *Journal of Biological Chemistry* determined that fasting produces increased activity of specific metabolic pathways involved in resistance to weight loss (Ding, Lichti, Kim, Gonzalez, & Staudinger, 2006). According to the researchers, evidence suggests that this phenomenon may in part occur through the action of the constitutive androstane receptor (CAR). CAR is a protein that in humans is encoded by genes. It is a nuclear receptor that functions as a sensor of endobiotic and xenobiotic substances and in response upregulates the expression of proteins that are responsible for the metabolism and excretion of those substances. This makes CAR important in the detoxification of foreign substances such as drugs (Masuno et. al., 1994). The primary limitation of this study was the fact that the subjects were mice, and it is often inaccurate to generalize findings of animal research to humans. The significance of this discovery has importance in the development of drug therapies and indicates that fasting may change living organisms on a genetic level, as was previously discussed.

If someone is fasting to lose weight, it is important to adjust his or her expectations accordingly. For example, the initial weight lost during fasting is generally due to mild dehydration and the metabolism of residual material from the digestive tract (Fuhrman, 1995). Any individual considering fasting for weight loss should evaluate the level of commitment needed to making dietary changes after the fast. Although fasting can be an effective way to lose a substantial amount of weight, the results usually do not last if the patient does not modify her or his diet. Joel Fuhrman (1995), a medical doctor who has trained hundreds of doctors in therapeutic fasting, said, “Fasting to lose weight without changing your diet is pointless” (p. 76).

A number of studies have tracked the long term results of patients who used fasting to lose weight. A study in 1976 followed 42 patients for an average of 21 months after fasting (Berger, Granz, Berchtold, Kruskemper, & Zimmermann, 1976). Fourteen patients had lost more weight and nine weighed more than they did before the fast.

In another study, researchers followed 121 patients for over 7 years who had fasted for 1 to 2 months to lose weight (Drenick & Johnson, 1978). After 2 to 3 years, 50% had reverted to their pre-fast weight, and by the 7-year mark, 90% had reverted.

These different long-term results may be indicative of the need to incorporate the use of dietary changes, psychotherapy, and other lifestyle modifications as part of a post-fast protocol for weight loss. Further research including these variables in a factor analysis could benefit future therapeutic models.

Fasting and Gastrointestinal Disorders

It is probably no coincidence that the natural response to indigestion is to stop eating. Fasting gives the digestive tract a break from processing food and offers the gastrointestinal system a time to rest.

There have been a number of studies examining the effects of water-only fasting on gastrointestinal disorders. In 1989, Scottish researchers compared the effects of fasting with 19 patients whose duodenal ulcers would not heal despite treatment with the drug ranitidine (Johnston & Wormsley, 1989). During the study, the patients continued to receive ranitidine, which appeared to work significantly better when combined with fasting. The researchers found that on the days when the patients fasted, gastric acidity was significantly less than on the days when food was consumed. The researchers concluded that “Prolonged fasting can improve the control of gastric secretion and may allow resistant ulcers to heal” (p. 471).

In a random trial of 88 patients with acute pancreatitis, fasting was determined to be more effective than cimetidine, a drug used to treat ulcers (Navarro et al., 1984). The researchers suggested that “fasting alone be initially used as the simpler and more economical therapy” (p.

224).

A 2006 Japanese study investigated fasting as a treatment for patients with irritable bowel syndrome (IBS) who had not responded to drug therapy (Kanazawa & Fukudo, 2006). Of the 58 patients enrolled in this study, 36 underwent fasting, whereas the remaining 22 received drug treatment and psychotherapy. At the start of the study, there were no significant differences in the 4-point severity scales of gastrointestinal and psychological symptoms between the 2 groups. The fasting protocol for the intervention group consisted of 10 days of fasting followed by 5 days of refeeding. Changes in scores of symptoms before and after each treatment (fasting, drug therapy, and psychotherapy) were analyzed. Fasting therapy significantly improved 7 out of the 10 symptoms assessed; that is, abdominal pain-discomfort (p <.001), abdominal distension (p <.001), diarrhea (p <.001), anorexia (p =.02), nausea (p <.01), anxiety (p <.001), and interference with life in general (p <.001). By comparison, the control therapy significantly improved only 3 out of the 10 symptoms assessed; those being abdominal pain-discomfort (p =.03), abdominal distension (p <.01), and interference with life (p =.01). The researchers concluded that fasting "may have beneficial effects on intractable patients with IBS" (p. 220).

Other gastrointestinal disorders that respond well to fasting include inflammatory bowel diseases, such as Crohn' s disease and ulcerative colitis (Dmitriyev, 2001; Fuhrman, 1995).

Fasting and Asthma

Fasting has long been associated with asthma, although not always in a curative way. The ancient practice of Ayurveda contends that excessive fasting can cause asthma, particularly in conjunction with other habits, such as over-eating and consuming cold foods (Mehta, Sahrma, & Guppta, 2003). Ayurveda also recommends water-only fasting as a treatment for asthma, but in intervals of three days at a time.

In 1913, James Adam wrote *Asthma and Its Radical Treatment,* and recommended periodic fasting as a cure for asthma. Inspired by the work of French physician G. Guelpa, Adam suggested a series of brief fasts in succession, much like intermittent fasting. According to Adams, "In asthma and other diseases, the importance of week-end fasting as initial treatment. Thereby we anticipate and in the end prevent the recurrence of the disease" (p. 53).

The benefits of fasting in asthmatics have been well documented in the Russian medical literature (Dzhugostran et al., 1991; Gorbachev et al., 1979; Kokosov et al., 1991). Russian clinical trials found that more than 75 percent of patients had greatly improved conditions or never had symptoms of asthma again after fasting. In a review of Russian research, the authors concluded that fasting should be the treatment of choice in patients with complicated bronchial asthma (Gorbachev et al., 1979).

In a Turkish study, fasting for only 12 hours allowed 121 asthmatic patients to reduce inhaled medication (Erkekol et al., 2006). At the start of the study, 96% of the patients were using medication, whereas only 13% needed medication at the conclusion.

In a Ukraine study involving patients with preasthma and bronchial asthma, researchers found that a 7-day fasting period proved to be effective in reducing the incidence rate of viral infections (Tovt-Korshyns'ka et al., 2002). Additionally, the patients had a significant decrease in the level of anxiety, as measured by Spilberger Anxiety Inventory.

Joel Fuhrman (1995), a physician with extensive experience fasting asthmatic patients, said that the more severe the asthma and the greater the reliance on medication, the longer it takes to achieve recovery using natural methods. Fuhrman found that with patients with asthma, either a prolonged fast or two fasts with a vegan diet in between usually eliminated the need medication, even for those who had been on drugs for years.

Fasting and Epilepsy

Fasting as a treatment for seizures was discussed in the Bible. When a young boy fell to the ground and foamed at the mouth, Jesus' disciples tried to assist but were of no help. In Mark 9:29, the disciples asked Jesus why they had not been able to cure the epileptic boy, and Jesus replied "this kind can come out by nothing but prayer and fasting" (New King James Version).

Ancient Greek physicians treated epilepsy using fasting and dietary restriction (Elzawahry, 2010). Epilepsy was described in detail by Hippocrates in the treatise *On the Sacred Disease* (Casey, 2000) and he was known to prescribe fasting as a treatment for seizures (Wheless, 2004). The royal Greek physician Erasistratus said, “One inclining to epilepsy should be made to fast without mercy and be put on short rations” (as cited in Temkin, 1994, p. 57).

Modern research examining the effectiveness of water-only fasting and seizures began in the early 1900s in France (Kerndt et al., 1982). In 1911, 20 epileptic patients were treated with a low-calorie vegetarian diet followed by periods of fasting (Guelpa & Marie, 1911). Two of the subjects improved substantially, while most had difficulty complying with the dietary and fasting protocols. For those for did adhere, the diet improved cognitive abilities as compared to potassium bromide.

In 1916, T. E. McMurray wrote to *the New York Medical Journal* claiming success in treating epileptic patients with fasting followed by a starch-and sugar-free diet (McMurray, 1916).

In the early 1920s, osteopathic physician Hugh Conklin, of Battle Creek, Michigan, began to treat his epileptic patients by recommending fasts of 18 to 25 days (Conklin, 1922; Hendricks, 1995; Freeman, Kelly, & Freeman, 1994). Conklin treated hundreds of epileptic patients with fasting and claimed a success rate of 50% in adults and 90% in children (Conklin, 1922; Lennox & Cobb, 1928). Conklin’s fasting therapy was adopted by neurologists with mainstream medical practices.

Further studies in the 1920s began to illustrate the fact that while fasting decreased the length, severity, and number of seizures during the fast, seizures usually returned after breaking the fast (Geyelin, 1929; Hoeffel & Moriarty, 1924; Lennox & Cobb, 1928).

In 1921, endocrinologist Rawle Geyelin reported his experiences treating epilepsy with fasting to the American Medical Association convention (Freeman, Kossoff, & Hartman, 2007). Geyelin had witnessed Conklin’s success and treated 36 of his epileptic patients with fasts, achieving similar results (Geyelin, 1921).

During this period, Charles Howland, the parent of one of Conklin’s patients, donated $5,000 to study ketosis during fasting (Swink, Vining, & Freeman, 1997). He donated the money to his brother, John Howland, a professor of pediatrics at Johns Hopkins Hospital,. who used it to fund research by Stanley Cobb and William G. Lennox (Lennox & Cobb, 1928; Wheless, 2004).

The treatment of seizures with fasting eventually lead to the development of the ketogenic diet, a high-fat, adequate-protein, low-carbohydrate diet used primarily to treat drug-resistant epilepsy in children (Freeman, Kossoff, Freeman, & Kelly, 2007).

The ketogenic diet involves a diet that mimics a state of fasting and forces the body to burn fats rather than carbohydrates (Elzawahry, 2010). The diet enables some of the biochemical effects of fasting while providing calories for the body in the form of fats and protein. Normally, carbohydrates from food are converted into glucose, which is important in maintaining brain function. When an individual fasts or has only a small amount of carbohydrates in their diet, the liver begins to convert fat into fatty acids and ketone bodies, which replace glucose as an energy source in the brain (Freeman et al., 2007). For some epileptic patients, an elevated level of ketone bodies in the blood leads to a reduction in the frequency of epileptic seizures. However, this effect only occurs in a limited number of epileptic patients. The ketogenic diet has been utilized in the United States since the early 1900s and continues to be used in the treatment of childhood epilepsy (Wheless, 2004).

Fasting and Cancer

Scientists have known since 2007 that intermittent water-only fasting can help patients withstand higher doses of chemotherapy by reducing the side-effects and protecting normal cells against much of the damage caused by the drug (Johnson at al., 2007; Lee & Longo, 2011; Raffaghello et al., 2008). A study published in *Proceedings of the National Academy of Science* in 2008 found that fasting for two days before chemotherapy protected cancer patients against the toxic side effects by shielding healthy cells while allowing the malignant ones to be destroyed (Raffaghello et al., 2008). In 2009, a case report study published in the journal *Aging,* revealed that 10 individuals with cancer who fasted intermittently in cycles experienced less adverse effects from chemotherapy (Safdie et al., 2009).

A 2008 study at the University of California at Berkeley found that eating every other day decreased cell proliferation rates, an effect known to reduce the development of cancers. In animal models, intermittent fasting was found to reduce cancer growth on the skin and in breast tissue (Varady et al., 2008).

In a paper published in 2010 in *Cancer Research,* a team at the University of Southern California looked at the effects of fasting on mice that had been injected with human cancer (Lee et al., 2010). Fasting reduced their IGF-1 levels, an effect which has been found to prolong life (Laron, 2008). When the mice received chemotherapy, none of the normal-diet control group survived, while 60% of fasting mice lived.

In 2012, a group of researchers found that fasting had the potential to be as effective as chemotherapy for treating some types of cancer. As a result of their research, published in the journal *Science Translational Medicine,* the scientists concluded that cycles of 2 to 4 days of fasting were as effective as chemotherapeutic agents in delaying the progression of certain tumors (Lee et al., 2012). As is typical in this type of research, the mice had been injected with human cancer cells.

The results indicated that five out of eight cancer types in mice responded to fasting alone. In response similar to chemotherapy, fasting slowed the growth and spread of tumors. In summation, the researchers said, “These studies suggest that multiple cycles of fasting promote differential stress sensitization in a wide range of tumors and could potentially replace or augment the efficacy of certain chemotherapy drugs in the treatment of various cancers” (Lee et al., p. 1). The researchers ran a variety of test protocols. In one procedure, multiple cycles of fasting combined with chemotherapy cured 20 percent of mice with a highly aggressive type of cancer that had spread throughout their body and 40 percent of mice with a more limited spread of the same cancer. No mice survived in either case if treated with chemotherapy alone. The study found that fasting cycles without chemotherapy slowed the growth of breast cancer, melanoma, glioma, and human neuroblastoma. In several cases, the fasting cycles were as effective as chemotherapy. Fasting also extended survival in mice bearing a human ovarian cancer. In the case of melanoma, the cancer cells became resistant to fasting alone after a single round; however, a single cycle of fasting was as effective as chemotherapy in reducing the spread of cancer to other organs. For all the types of cancer, fasting combined with chemotherapy improved survival rates, slowed tumor growth, and/or limited the spread of tumors.

According to Valter D. Longo, one of the study’s authors, “A way to beat cancer cells may not be to try to find drugs that kill them specifically but to confuse them by generating extreme environments, such as fasting that only normal cells can quickly respond to” (as cited in Marziali, 2012, ¶ 28).

Longo and the other researchers examined one type of breast cancer in particular to try to understand the effects of fasting. They noticed that when normal cells were deprived of nutrients, they entered a dormant state similar to hibernation, whereas the cancer cells attempted to continue to grow and divide. This led to the formation of damaging free radical molecules, which in turn caused the cancer cells to self-destruct. Longo said, “The cell is, in fact, committing cellular suicide. What we’re seeing is that the cancer cell tries to compensate for the lack of all these things missing in the blood after fasting. It may be trying to replace them, but it can’t” (as cited in Marziali, 2012, ¶21). In terms of human research, only a clinical trial over several years will demonstrate whether humans can benefit from the same treatment.

In September of 2012, Longo released a study that found controlled fasting improved the effectiveness of radiation therapy in cancer treatments, extending life expectancy in mice with aggressive brain tumors (Wu, 2012). The study was the first to show that periods of fasting may have the same augmenting effect on radiation therapy as it does with chemotherapy in treating gliomas. Gliomas, the most commonly diagnosed brain tumor, have a median survival of less than two years.

Previous research has indicated that fasting can have an immunostimulating effect, which may be part of the reason that it appeared so effective in helping to treat certain types of cancer (Hiramoto et al., 2008; Michalsen et al., 2005). Fuhrman (1995) noted that fasting assists the body in fighting simple viral infections. Fuhrman pointed to Ancel Keys’ landmark study in which the fasting participants had a reproducible decrease in the incidence of infection.

There are several additional physiological mechanisms which may explain how fasting helps fight cancer. During fasting, blood pictures reveal an increased number of white blood cells that occur as serum fats are lowered and the thinner blood permits an increased oxygenation of tissues (Goldberg, Anderson, & Trivieri, 1994). Additionally, researchers have noted increased T cell activity and an enhanced immune response during fasting (Hiramoto et al., 2008; Trollmo, Verdrengh, & Tarkowski, 1997; Wing, Stanko, Winkelstein, & Adibi, 1983). Immune function may also improve because the digestive tract is not inflamed due to potentially allergic food reactions (Murray & Pizzorno, 1997).

Excessive cell proliferation, particularly due to repeated injuries to the same tissues, can increase the odds of a cancerous mutation. As cancers arise and progress, there is a selection for those genetic changes that give the cancer cell a proliferative advantage over normal cells. In 2008, a group of researchers found that alternate-day fasting regimens reduced the cell proliferation rates in mice (Varady et al., 2008).

Unsupervised fasting should be avoided in cancer patients, especially those who have experienced significant weight loss. These patients tend to be malnourished already and further nutrient restriction could be life-threatening.

Fasting and Autoimmune Diseases

An autoimmune disease is a condition that occurs when the immune system mistakenly attacks and destroys healthy body tissue. One or more organ or tissue types can be affected including blood vessels, red blood cells, joints, muscles, connective tissue, skin, and endocrine glands, such as the thyroid or pancreas (Davidson & Diamond, 2006).

What causes the immune system to no longer tell the difference between healthy body tissues and antigens is unknown. One theory is that microorganisms, such as bacteria or viruses, may trigger these changes, especially in individuals with a genetic predisposition to autoimmune disease (American Medical Association, 2003).

There are more than 80 different types of autoimmune disorders, and they affect the body in different ways (Rose & Mackay, 2006). Of all autoimmune disorders, the two that have been treated most successfully with fasting are rheumatoid arthritis and systemic lupus erythematosus.

Rheumatoid Arthritis

Rheumatoid arthritis (RA) is a chronic, systemic inflammatory disorder that can affect many tissues and organs, but principally attacks flexible (synovial) joints (Edison & Gilliland, 2012; Mackie, Quinn, & Emery, 2006). RA accounts for 22% of all deaths from arthritis and other rheumatic conditions (Shurin & Smolkin, 2007) and the five-year survival rate for someone with severe RA and multiple joint involvement is around 45% (Fuhrman, 1995).

Water-only fasting has been found to be an effective therapy for RA sufferers due to a variety of mechanisms (Allan, 2002; Fuhrman, Sarter, & Calabro, 2002). Researchers have documented the anti-inflammatory effects of fasting in treating RA, observing a decrease in arthralgia, pain, stiffness, medication, and ESR (Kroker et al., 1984; Seignalet, 1992;

Skoldstam et al., 1979; Skoldstam & Magnusson, 1991; Sundqvist et al., 1982; Trollmo et al., 1997; Uden et al., 1983). ESR stands for erythrocyte sedimentation rate, or sed rate for short, and is a test used to measure how much inflammation is in the body. One study of 43 patients with RA found significant improvement in grip strength, pain, ESR, and functional activity after a 7-day fast (Kroker et al., 1984).

Fasting research has helped to expose a strong association between RA and food sensitivities. Researchers have suggested that the decrease in symptoms of RA during fasting might be due to the decrease in gut permeability which accompanies fasting (Sundqvist et al., 1982). This action reduces the absorption of antigenic molecules into the blood from the gastrointestinal tract (Panush, 1984). Based on these mechanisms, it is theorized that fasting prevents the leakage of undigested proteins into the bloodstream, thereby offering protection against RA and other autoimmune conditions.

A 2001 meta-analysis reviewed 31 studies on the effects of fasting followed by a vegetarian diet in patients with RA (Muller, de Toledo, & Resch, 2001). The authors concluded that fasting, followed by a vegetarian diet, was useful in the treatment of RA.

In 2002, Joel Fuhrman, Barbara Sarter, and David J. Calabro published a series of case studies detailing their work treating patients with RA using fasting and a vegan diet. They noted an improvement in all cases and said, “Medically supervised, water-only fasting is known to be an effective means of lessening the symptoms of autoimmune illnesses; in many cases, remission of the disease occurs” (p. 112).

In order to maintain the benefits of fasting in RA, experts recommend that patients adopt a vegetarian or vegan diet (Fuhrman et al., 2002; Kroker et al., 1984; Muller et al., 2001; Seignalet, 1992; Skoldstam et al., 1979).

Systemic Lupus Erythematosus

Systemic lupus erythematosus (SLE) is a long-term autoimmune disorder. Unlike other autoimmune conditions, SLE attacks a wide variety of tissues, including the brain, kidneys, joints, the skin, and other organs (Kang, & Grant, 2006). Symptoms vary from person to person and often come and go, although almost everyone with SLE has joint pain and swelling. Some develop arthritis, and the most frequently affected joints are the fingers, hands, wrists, and knees (Hahn, 2008). The most serious problem is lupus-induced kidney damage, which can cause death.

The most commonly used medications for treating SLE are steroids, chemotherapeutic drugs, and immunosuppressive medicines (Tassiulas & Boumpas, 2009). Many SLE sufferers claim that the traditional treatment for SLE is as harmful as the disease itself.

According to Joel Fuhrman (1995), SLE can sometimes be completely reversed using fasting. In many cases, lupus patients have come to Fuhrman on drugs such as prednisone, which he weans them off slowly. In discussing the effectiveness of using fasting to treat lupus, Fuhrman (1995) said, “If a patient is treated early enough with this nondrug approach, drug-based treatment of lupus can usually be eliminated” (p. 164).

Conclusion

Therapeutic fasting is a powerful tool that promotes the body's inherent ability to heal. If practiced correctly, fasting is generally safe, economical, and effective. Certain conditions that can be helped with fasting, such as gout, require strict supervision to prevent worsening of the patient's health. Contraindications of fasting are discussed in chapter 15.

According to physician Elson Haas, author of *Staying Healthy With Nutrition: The Complete Guide to Diet & Nutritional Medicine,* "From a medical point of view, fasting is not utilized often enough. We take vacations from work to relax, recharge, and gain new perspectives on our life—why not take occasional breaks from food?" (Haas & Levin, 2006, p. 50). Haas goes so far as to say that fasting should be a part of any sound health plan, particularly in countries such as the United States where diets are less than optimal. Haas is by no means the only physician to recommend periodic fasting as a preventative measure, contemporarily and historically, and in both conventional and alternative realms of medicine.

5

Complementary and Alternative Medicine and Fasting

> Fasting is especially compatible with the philosophical tenets of
> naturopathic medicine, and the roots of the profession are
> steeped in the rich history of fasting.
>
> —MARK CARNEY (2010, p. 1)

Fasting has a strong association with complementary and alternative medicine (CAM), a collection of medical practices revered by many and criticized by others. Sub categories that are associated with CAM include *complementary medicine* and *alternative medicine.* Complementary medicine is any therapy that is used in conjunction with conventional medicine. An example of a complementary therapy is using aromatherapy to help lessen a patient’s discomfort following surgery. Alternative medicine is used in place of conventional medicine, such as using a special diet to treat hypertension instead of taking antihypertensive medication recommended by a conventional doctor.

Studies assessing the prevalence of alternative medicine have concluded that most every country uses some form of complementary and/or alternative medicine (Ernst & Cassileth, 1998; Ernst, Pittler, & Wider, 2006). In terms of regions, this discussion focuses primarily on the United States, Russia, and Germany because these countries have been the most influential in the contemporary advancement of water-only fasting as a therapy.

In the United States, CAM therapies have been increasingly popular, with usage among adults rising from 34% in 1990 to 40% in 2007 (Eisenberg et al., 1993; Barnes, Bloom, & Nahin, 2009). In these studies, usage was defined as using a CAM therapy at least once during the previous 12 months. Research has indicated that the types of CAM therapies seen among adults include deep breathing exercises, guided visualization, meditation, naturopathy, and yoga. In Russia, CAM therapies are generally referred to as folk or traditional medicine.

The U.S. National Center for Complementary and Alternative Medicine

(NCCAM) defined complementary and alternative medicine as “a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine.” (National Center for Complementary and Alternative Medicine [NCCAM], 2010). Therapeutic fasting has historically fallen under the purview of physicians who practice branches of medicine that fit into this category. Although fasting was documented as a treatment for obesity in medical journals throughout much of the twentieth century, it is no longer considered a conventional therapy or a part of mainstream health care.

In the United States, NCCAM has developed one of the most widely used classification systems for CAM and divides such therapies into five major groups: 1. Whole medical systems, such as Ayurveda, homeopathy, naturopathy, and traditional Chinese medicine.

2. Mind-body medicine using a holistic approach to health that explores the interconnection between the mind, body, and spirit.
3. Biology-based practices using substances found in nature such as herbs, foods, vitamins, and other natural substances.
4. Manipulative and body-based practices, such as chiropractic and osteopathic medicine.
5. Energy medicine that works with energy fields, such as acupuncture and Qigong. (NCCAM, 2010) Of the many approaches that fall under the CAM umbrella, a number have a long history of using fasting as a treatment modality, most notably Ayurveda, traditional Chinese medicine, naturopathy, and orthopathy (Micozzi, 2010; Pizzorno, Snider, & Katzinger, 2010). All of these systems have a primary focus on the patient rather than the disease. Furthermore, all aim to promote health and enhance the quality of life through prevention in a holistic fashion. These tenets are a common thread that run through most CAM systems of medicine and associated therapies.

There are a number of common elements in philosophy and praxis of Ayurveda, traditional Chinese medicine (TCM), and traditional Tibetan medicine (TTM) (Patwardhan, Warude, Pushpangadan, & Bhatt, 2005). All three are ancient traditions with strong spiritual components, although that has been downplayed in TCM since China’s Communist revolution (Svoboda & Lade, 1996). Ayurveda, TCM, and TTM all consider the human in relationship with earthly elements. In TCM, the elements are earth, water, fire, wood, and metal (Weeks, 2012). In Ayurveda, the world is comprised of combinations of earth, water, fire, and air (Rosen, 2006). In TTM, the elements are earth, water, fire, air and space (Kletter & Kriechbaum, 2001).

Naturopathy and orthopathy also share some of the same philosophies. There is much overlap between these systems, largely because many of the original champions did not distinguish themselves as a *naturopath* or an *orthopath,* partially because these terms were not used during many of their careers. Both traditions were associated with a group called *The Nature Cure Movement* (Brown, 1988).

The early Nature Cure Movement in Britain and the nineteenth century American health reformers have been credited as the founders of CAM (Brown, 1988). The creators of these organizations held one common view; that disease can only be cured with natural remedies such as fasting, diet, and hydrotherapy, followed by a natural lifestyle (Pizzorno et al., 2010).

Fasting and Naturopathic Medicine Naturopathy is a system of medicine that has a long history of supporting water-only fasting (Carney, 2010). Naturopathic philosophy favors a holistic approach and seeks to find the least invasive measures necessary for symptom improvement or resolution, thus encouraging minimal use of surgery and unnecessary drugs.

According to the Association of Accredited Naturopathic Medical Colleges, “Naturopathic medicine is defined by principles rather than by methods or modalities. Above all, it honors the body’s innate wisdom to heal” (AANMC, 2011, ¶2). Naturopathy is based on a belief in vitalism, which posits that a special energy called *vital energy* or *vital force* guides bodily processes such as metabolism, reproduction, growth, and adaptation (Sarris & Wardle, 2010).

Naturopathy—also called naturopathic medicine—has its roots in ancient Greece. The ancient Greek physician Hippocrates (c. 460—375 BCE) prescribed fasting for a variety of ailments (Trattler & Jones, 2004). Other Greek physicians who recommended fasting included Asclepiades, Thessalus, Celsus (Null, 1973), and Claudius Galen (Galen, 1984).

The word *naturopathy* is derived from Greek and Latin, and translates as *nature disease* (Willis, Reynolds, & Keleher, 2008, p. 157). In 1895, John Scheel of New York first used the word “naturopathy” to describe his method of health care (Pizzorno et al., 2010).

During the 1800s, fasting was frequently used by doctors and health advocates throughout much of Europe and the United States (Pizzorno et al., 2010). According to Alfons Ferrus, an Italian physician who prescribed fasting during this period, "slow and impassive people find fasting easiest, whereas those people readily irritated and quick to become angry find fasting more difficult" (as cited in Atkins, 2005, p. 16).

Modern naturopathy grew out of the British Nature Cure Movement (Lindlahr, 1914). By the mid-nineteenth century, the American health reformers were known in Britain for their pioneering ideas that eventually developed into naturopathic medicine (Brown, 1988).

In 1902, German physician Benedict Lust purchased the rights to the term naturopathy from John Scheel and opened the American School of Naturopathy in New York, New York; the first naturopathic medical school in the world (Lust, 2006; Peters & Woodham, 2000). He went on to establish two successful health resorts; Yungborn in Butler, New Jersey, and Tangerine, Florida, facilities modeled after Adolf Just's clinic in Germany (Kirchfeld & Boyle, 1994). Lust also founded the American Naturopathic Association, the first national professional organization for naturopathic physicians (Whorton, 2002). In 1918, he published *The Universal Naturopathic Encyclopedia* for drugless therapy and founded the journal *Nature's Path.*

Lust became known as the father of modern naturopathy in America, and his writings introduced the United States not only to German naturopathic methods, but Indian concepts of Ayurveda and yoga as well (Castellano-Hoyt, 2003; Pizzorno et al., 2010).

Paramahansa Yogananda was one of several Indian yogis who wrote articles about fasting for Lust's journal *Nature's Path* during the 1920s (Castellano-Hoyt, 2003). Lust was harassed by authorities and medical associations for the methods he promoted at his health resorts, which—in addition to fasting and hydrotherapy—included massage therapy and nude sunbathing. He was arrested at least 19 times by New York and Federal authorities (Lust, 2006).

In 1900, Bernarr Macfadden, a publisher from Mill Spring, Missouri, and Felix Oswald, a doctor from Belgium, wrote *Fasting—Hydropathy—Exercise: Nature's Wonderful Remedies for the Cure of All Chronic and Acute Diseases.* Macfadden and Oswald (1900) held some interesting beliefs about fasting, including the idea that certain tasks should be reserved for completion during a fast: It is, therefore, a good plan to reserve a specially diverting job of work for the term of a fasting-cure, but it should be remembered that server physical efforts tend to complicate the demands upon the reserve of the organism. (p. 65) Although Macfadden was not a health practitioner, he founded a number of organizations and clinics that promoted fasting and had many devoted followers.

One of Britain's best known naturopaths and staunch fasting advocates was Stanley Lief (Kirchfeld & Boyle, 1994). Lief studied medicine at Bernarr Macfadden's International College of Drugless Physicians in Chicago in the early 1900s. While there, Lief spent time at Henry Lindlahr's sanatorium where fasting was used as a treatment for a variety of ailments. Upon returning to England, Leif became manager of Macfadden's Healthatorium in Brighton where fasting was also utilized (Koenig, 2005; Sinclair, 1911). He later started his own health retreat and established the British college of Naturopathy and Osteopathy in 1936. Although Lief used a wide variety of nature cure therapies, fasting was one of his specialties. He had a specific protocol that he recommended during fasting, including enemas at least every other day. When he was asked about the effectiveness of the different treatments he used, Leif replied, "It is the fasting that gets you well" (as cited in Kirchfeld & Boyle, 1994, p. 291).

Two other individuals heavily influenced by Macfadden's work were Upton Sinclair and Henry Lindlahr. Sinclair (1911) was a journalist who wrote extensively about his personal fasting experience in his book *The Fasting Cure.* Lindlahr, a physician who followed the traditions of both Macfadden and Sinclair, opened Sanitarium for Nature Cure and Osteopathy on Ashland Boulevard in Chicago, Illinois in 1906 (Gilman, 2008). Lindlahr practiced therapeutic fasting with his patients on a limited basis, usually during acute phases of illness (Kirchfeld & Boyle, 1994). In 1926, the well-known labor leader Eugene Debs died at Lindlahr's clinic after having been on a prolonged fast. The official cause of death was heart failure, but some claimed it was brought on by malnutrition. Macfadden and Sinclair were erroneously blamed because they promoted fasting as a cure and supported Lindlahr (Gardner, 1957).

Osteopath Linda Burfield-Hazzard (1908) was one of the best-known

American advocates of fasting. She supervised over 30,000 fasts, during which 22 patients died from complications (Johnson, 1973). In 1912, she was brought up on manslaughter charges after the death of one of her patients during a supervised fast. Burfield-Hazzard was tried and convicted, but in 1916 received a full gubernatorial pardon (Kirchfeld & Boyle, 1994). Burfield-Hazzard (1915), who referred to herself as a naturopath in her correspondence with Lust, authored a number of books on fasting.

Arnold Ehret (1976/1922; 1996/1922), a German-born health educator who came to the United States in 1914, was an advocate of fasting. Ehret's interest in fasting began in 1907, when he visited Monte Verità, a health retreat in Ascona, Italy where people went to fast in the early 1900s (Green, 1986). In 1909, Ehret fasted for 51 days at Kastans Panoptikum, a health facility in Cologne. Ehret undertook numerous lengthy fasts during his lifetime and operated health clinics in Europe and in the United States.

By the 1920s, naturopathy had gained considerable credibility in the United States and there were thousands of practicing naturopaths, many of whom promoted fasting. In the western states, Otis G. Carroll from Spokane, Washington, practiced through the 1920s, often fasting his patients for 7 to 21 days (Kirchfeld & Boyle, 1994). Carroll called himself a *sanipractor,* a term sometimes used to refer to naturopaths, particularly in the Pacific Northwest region of the U.S. (Baer, 2001).

Even before the 1900s, fasting remained more common in German-speaking countries than in the United States. When drug therapy came into prominence in the United States in the 1930s, naturopathy faded (Baer, 2001). The tide turned in the 1960s as Americans developed a new appreciation of more natural and less-invasive approaches to medicine. During this period, a health movement brought about a variety of water and juice fasting fad diets (Bragg & Bragg, 2004; Cott, 1975).

Over the next few decades, fasting was utilized by naturopaths who wanted to return to a traditional type of practice. In his 2002 book *Healing Through Naturopathy,* V. M. Kulkarni wrote, “Fasting in these days has become very popular among some of the naturopaths who consider it to be the only means of rational and natural cure for all diseases” (p. 255).

In 1978, Bastyr University was established in Kenmore, Washington, and eventually became the largest accredited university for natural health arts and sciences in the U.S. (Bastyr University, 2011). Alan Goldhamer, who operates TrueNorth Health Center in Santa Rosa, California, has taught clinical fasting at Bastyr. One of the textbooks used at Bastyr is Leon Chaitow and Joseph Pizzorno's (2008) *Naturopathic Physical Medicine: Theory and Practice for Manual Therapists and Naturopaths.* In outlining licensing laws and scope of practice for naturopathic medicine, Chaitow and Pizzorno listed "therapeutic fasting" as falling within those boundaries (p. 3).

Fasting and Natural Hygiene While naturopathic doctors were encouraging the use of therapeutic fasting in naturopathic medicine, there was another school of medicine that developed around the same period that equally embraced water-only fasting called *orthopathy* (also known as *hygienic medicine* or *natural hygiene).* This movement attracted doctors who were educated and trained in a variety of different backgrounds, including naturopathy, chiropractic, osteopathy, and conventional medical doctors. The primary methods in natural hygiene were dietary, including vegetarianism and fasting (Carrington & Shelton, 2010).

One of the first physicians of the natural hygiene system was Isaac Jennings of Derby, Connecticut. In 1822, after practicing conventional medicine for 20 years, Jennings began formulating ideas about the benefits of fasting and a vegetarian diet (Isaac, 2010/1867; Orcutt & Beardsley, 1880).

Sylvester Graham, from Suffield, Connecticut was another important figure in the natural hygiene movement who also emphasized the importance of vegetarianism and fasting (Carrington & Shelton, 2010). Around 1829, Graham invented the Graham diet, which consisted mainly of fresh fruits and vegetables, whole wheat, and high fiber foods, and excluded meat and spices altogether. Graham (1849) once wrote, The flesh-eater always suffers much more from fasting (911), and experiences a more rapid decline of his muscular power; and he who seasons his food highly with stimulating condiments, feels the loss of a single meal severely; a fast of twenty-four hours almost unmans him; and three or four days' abstinence from food completely prostrates him. (p. 248) In the 1880s, Charles E. Page from Boston was promoting and writing about hygiene and fasting (Andrews, 1914). He also made valuable literary contributions to numerous magazines as well as extolling the virtues of fasting in the care of children. Page (1884) advocated fasting as a treatment for obesity and wrote, “Among the disorders radically and safely removed by fasting, is obesity or any degree of excess in weight… A fat person, at whatever period of life, has not a sound tissue in his body” (p. 148).

There were a number of other American doctors who influenced the development of the natural hygiene movement. Russell Trall, an American health reformer and physician from Vernon, Connecticut, was a staunch advocate of vegetarianism and fasting and was influenced by the work of Sylvester Graham and Isaac Jennings (Propp, 2008). In 1852, Trall founded the New York Hygieo-Therapeutic College, the first medical school to admit women on equal terms with men (Carrington & Shelton, 2010).

Another American physician who promoted the principles of natural hygiene was John H. Tilden from Van Burenburg, Illinois (Propp, 2008). He received his medical degree in 1872 and wrote extensively on alternative medicine procedures, such as fasting. At his clinic in Denver, Colorado, Tilden regularly used fasting as a treatment modality (Carrington & Shelton, 2010).

In 1877, Henry Tanner, a physician from Duluth, Minnesota became one of the first American physicians to partake in and prescribe fasting in the United States (Gunn, 1880). During this period, what is described today as naturopathic medicine was called “eclectic,” taken from The Eclectic Medical College of Cincinnati (Haller, 1999, p. 16). Tanner was one of a number of traditional physicians with an interest in fasting.

Tanner had suffered for years with rheumatism and had consulted with several fellow physicians, all of whom considered his case hopeless (Hendricks, 2012). Tanner also had asthma, insomnia, and chronic pain. According to Tanner, I really believe that I am entitled to be called the father of therapeutic fasting in this country, for away back in 1877 I had given up hopes of ever regaining what might be called normal health. I was then in Minneapolis in the practice of my profession, and, after a strenuous time with a patient critically ill, I virtually collapsed. I was at such a low ebb physically and mentally at the time that I did not care whether I lived or died, and I determined that, since my drugs gave me no relief, I would starve myself to death ere I again would suffer the physical misery that had been mine for months preceding. I accordingly told Dr. Moyer, my consulting companion, that I would not again eat food until I was dead or recovered in health. (as cited in Burfield-Hazzard, 1915, p. 16) In 1881, Tanner proceeded to undertake a 42-day fast (Brumberg, 1988). At the time, science believed that ten days was the longest a human could survive without food. This belief was primarily based on the observation of the fasting girls of the period, such as Mollie Fancher (Brumberg, 1988).

Not only did Tanner fast for 42 days, during the fourth week he walked ten miles on the banks on the Minnehaha Creek (Hendricks, 2012). After his fast, Tanner had no symptoms of asthma, rheumatism, or chronic pain and lived a full life until he died at the age of ninety. In response to his experience, Tanner wrote *Forty Days Without Food* and prescribed fasting regularly to his patients (Gunn, 1880).

In 1877, Edward Hooker Dewey, an American physician in Meadville, Pennsylvania, began prescribing fasting after discovering its therapeutic value while treating a patient. In 1894, Dewey wrote *True Science of Living,* in which he said, Of the two principal matters recommended as the practical outcome of the theory of health developed in this book, the first is that fasting, or the abstinence from food until natural hunger calls for it, is the best way to bring about recovery from disease. (p. 5) During this same period, physicians in and around Germany were specializing in fasting and other natural therapies. In 1896, Adolf Just opened his Jungborn retreat in the Hartz Mountains near Isenburg, Germany, specializing in treating patients with fasting and natural medicine. According to Just, “Everyone should try fasting and practice it according to his own knowledge and with entire free will” (as cited in Kirchfeld & Boyle, 1994, p. 124). Just also revered the spiritual aspects of fasting and said it had the potential to “awaken the full spiritual power of man” (p. 124).

One of the more interesting figures associated with the natural hygiene movement is Hereward Carrington (1908; 1915). Hereward was the author of more than 20 books in the area of psychic research before turning his interests toward fasting. Beginning in 1908, Carrington wrote three books on fasting, detailing what he called the “the curative power of fasting” (p. 195). His first book put forward some intriguing assertions about fasting and mental illness, most notable that force-feeding an "insane" patient who refused to eat was not only contraindicated, but "barbarous and villainous" (p. 623).

By 1939, the natural hygiene movement had a new leader; chiropractor Herbert Shelton (1941), who became a major writer on the topic, beginning with *The Hygienic System: Orthopathy.* He is considered the founder of the American Natural Hygiene Society and the Nature Cure movement in America (Fuhrman, 2009).

During his career, Shelton supervised over 40,000 fasts (Johnson. 1973). Shelton received a great deal of notoriety and, at one point, Mohandas Gandhi invited Shelton to India to lecture on fasting and diet at local universities, an invitation he never accepted because a war broke out (Jones, 1995).

Shelton distinguished orthopathy from other medical schools of thought of its time, including naturopathy, heliopathy (the sun cure), homeopathy, and what Shelton (1934; 1978/1934) called "allopathic" or mainstream medicine. One of the aspects that Shelton used to differentiate orthopathy was his approach to diet, which continued to evolve over his career. Shelton worked closely with another man, Gerald Benesh, a chiropractor from California who also specialized in fasting. Together, Shelton and Benesh focused on promoting the American Natural Hygiene Society, and the term *natural hygiene* replaced *orthopathy* (Bazan, 1955).

Today, there are several natural hygiene organizations; the Natural Health Association (formerly the American Natural Hygiene Society), the International Natural Hygiene Society (INHS), and the International Association of Hygienic Physicians (IAHP). The IAHP is a professional association for licensed, primary care physicians, such as medical doctors and naturopaths that are trained by fasting facilities approved by the IAHP. This training focuses on teaching the skills that are necessary for a practitioner to supervise therapeutic fasting. According to Joseph E. Pizzorno, Jr., Pamela Snider, and Joseph Katzinger (2010), "Currently, certified professional Natural Hygienists are advocates of the highest standards of training and supervised clinical fasting and participate in the training of naturopathic physicians" (p. 301). There are a number of figures that were at the forefront of promoting fasting in the natural hygiene movement and contemporary medicine, many of whom were associated with the IAHP.

In 1984, two chiropractors, Alan Goldhamer and his wife, Jennifer

Marano, opened an inpatient fasting facility in Penngrove, California. The clinic was originally called the Center for Conservative Therapy, and the name later changed to TrueNorth Health Center (Holzman, 1998). In 2006, the center relocated to Santa Rosa, California, where it grew into a 22-bed clinic, and became one of the most important water-only fasting programs in the world (TrueNorth Health Center [TNHC], 2011a). Goldhamer recognized the need for psychotherapy to be available during fasting and included psychologist Doug Lisle as part of the staff from the beginning. In 2003, Lisle and Goldhamer co-wrote *The Pleasure Trap: Mastering the Hidden Force That Undermines Health & Happiness,* a landmark book about psychology, nutrition, and fasting (Lisle & Goldhamer, 2006).

As of 2012, Goldhamer was director of the TrueNorth Health Center and president of the IAHP (TNHC, 2011a). TrueNorth Health Center specializes in supervised fasting and the training and certification of physicians in that specialty. Goldhamer has supervised thousands of fasts and, as mentioned earlier, has taught a course on clinical fasting at Bastyr University (TNHC, 2011b). In addition, Goldhamer headed a number of landmark studies on fasting, most notably on reducing and eliminating hypertension (Goldhamer, 2002; Goldhamer et al., 2002).

Goldhamer completed his internship in fasting supervision at the Arcadia Health Center in Australia, under the direction of Alec Burton. Burton and his wife, Nejla, who are both chiropractors and osteopaths (Burton & Burton, 2011), opened the center in 1961 (Arcadia Health Centre, 2010; Huberman, 2010). Additionally, Nejla Burton has been a practicing clinical psychologist since the mid-1970s (Huberman, 2010). In discussing his fasting internship at Arcadia Health Center, Goldhamer said the following: Mine was an exciting and enriching experience. I worked very hard and was continually amazed at how effective fasting was-in even the sickest of patients. I remember saying to myself, “If this patient gets well, I’ll really be convinced.” I must have said that two dozen times during my internship. I am grateful to Drs. Alec and Nejla Burton for the opportunity to learn from them how to help sick people get well. (TNHC, 2011a, 1 6) Alec Burton was a founding member of the IAPNH, which later became the IAHP. In an interview in *Health Science Magazine,* Burton described the skill set involved in conducting a supervised fast: The art comes in recognizing that the application of

Hygiene is not a mechanistic thing. You are dealing with thinking, acting, feeling individuals whose emotional and mental tolerances vary widely. With fasting, for instance, you can talk with a person, discuss how they feel and see how they express themselves, and can determine whether they have had enough, irrespective of what the biochemistry and hematology tell you. (Huberman, 2010, ¶21) Another notable leader in the Natural Hygiene Movement is Keki Sidhwa, a naturopath and osteopath born in Bombay, India (Sidhwa, 2012). Sidhwa was co-founder and president of the British National Hygiene Society and president of the International Association of Professional Natural Hygienists (IAPNH). Sidhwa supervised over 25,000 people with fasts during his career.

Another facility that has offered supervised water-only fasting for over 30 years is the Regency Health Resort and Spa in Hallandale, Florida (Regency Health Spa, 2012). Supervision in provided by Frank Sabatino, a chiropractor and former president of the IAPNH.

Joel Fuhrman has been another prominent figure in the development of the contemporary natural hygiene movement. Fuhrman, a board-certified family physician and researcher on nutrition, specializes in preventing and reversing disease through nutritional and natural methods (Fuhrman, 1995, back cover). Fuhrman is an outspoken promoter of natural hygiene, veganism, and fasting. According to Fuhrman (1995), “There is nothing that can be taken that will ever accomplish the biochemical changes that occur when we undergo a complete fast” (p. 11).

When Fuhrman was 20 years old, he was a world-class athlete and Olympic ice skating hopeful. After suffering a severe heel injury, he was unable to walk for almost a year (Adams, 2012). As a last resort, a U.S. Olympic Committee orthopedist suggested that Fuhrman undergo an experimental surgery. Remembering that his father had used fasting to treat his arthritis, Fuhrman decided it might be his best chance at recovery (Fuhrman, 1995). Shortly after his realization, Fuhrman went to Dr. Shelton’s Health School in San Antonio, Texas. Fuhrman spent 46 days fasting at Shelton’s and lost 62 pounds, dropping to a mere 88 pounds (Adams, 2012). After the fast, he was not only able to walk again, he returned to figure skating and placed third in a world championship (Fuhrman, 1995). His experience inspired him to attend University of Pennsylvania medical school, where he earned a medical degree and specialized in nutritional medicine (Adams, 2012).

In 1995, Fuhrman wrote *Fasting and Eating for Health: A Medical Doctor's Program for Conquering Disease,* one of the most comprehensive and well-received books on water-only fasting in medicine. The first sentence of Fuhrman's book made his beliefs clear: "Therapeutic fasting accelerates the healing process and allows the body to recover from serious disease in a dramatically short period of time" (p. 1). Alan Goldhamer has used Fuhrman's book in the course he teaches at Bastyr University on therapeutic fasting.

In his book, Fuhrman discussed how he successfully used fasting to help patients with conditions such as diabetes, arthritis, lupus, psoriasis, eczema, ulcerative colitis, Crohn's disease, and cardiovascular diseases. After undergo water-only fasting under his supervision, patients were often able to get off of medication, avoid surgery, and, in many cases, illnesses were completely eliminated. In summary, Fuhrman said, "Fasting typically receives results whereas others have failed" (p. 20).

Fasting in Ayurvedic Medicine Ayurvedic medicine, sometimes called "Ayurveda" or "traditional Indian medicine," dates back to the Vedic period in India, believed to be have been over 3,000 years ago (Patwardhan et al., 2005; Rosen, 2006). In Sanskrit, the word "Ayurveda" means "Vedic science of life or longevity" (as cited in Frawley, 2000, p. 407).

In the United States, Ayurveda is considered a form of alternative medicine (NCCAM, 2010). Therapies commonly used in Ayurvedic medicine include diet, exercise, yoga, meditation, herbal remedies, and fasting (Coyle-Demetriou & Demetriou, 2007).

In Ayurveda, fasting is a means of detoxification and is classified as "the first and most important of all medicine" (Weeks, 2012, p. 120). Some Ayurvedic practitioners recommend fasting for one day per week (Warrier, Verma, & Sullivan, 2001). There are five types of Ayurvedic fasts; water-only fasting, dry fasting, juice fasting, broth fasting, and water fasting with herbal tea (Lad, 1993; Yarema, Rhoda, & Brannigan, 2006).

In order to understand how fasting works in Ayurvedic medicine, it is useful to have a basic understanding of the doshas, which are a Vedic classification of body types. In Ayurveda, each person has a particular constitution made up of one or a combination of the three doshas, Vata, Pitta, and Kapha (Rosen, 2006). The doshas are derived from the five elements: earth, water, fire, air, and ether. Each dosha represents a fundamental body type: ➢Vata is the kinetic energy in the body that controls the nervous system, bodily movements, and the processes of elimination (Svoboda, 1998). Vata is a combination of the elements air and water (Coyle-Demetriou & Demetriou, 2007).

- The Pitta dosha is primarily associated with digestion, metabolism, and energy production (Lad, 1993). Pitta is a mixture of the elements fire and water (Coyle-Demetriou & Demetriou, 2007).
- Kapha governs the structure of the body, holds the cells together, and forms the muscles, fat, bones, and sinews (Monier-Williams, 2000). Kapha is a blend of water and earth (Coyle-Demetriou & Demetriou, 2007).

The central concept of Ayurvedic medicine is the theory that health exists when there is a balance between doshas (Svoboda, 1998). In Ayurveda, each dosha type has a specific relationship to food and fasting (Coffey, 2004).

Vata people have difficulty tolerating long-term fasting because they lack the stamina to sustain long periods of food deprivation (Svoboda, 1998). Ayurvedic practitioners feel that juice fasting is best suited for this dosha (Yarema et al., 2006) and that Vata types should not observe a fast for more than 3 days (Lad, 1993).

Since Pitta people tend to eat frequently, they are not particularly fond of fasting and can grow easily frustrated (Svoboda, 1998). Just as with the Vata dosha, Ayurvedic practitioners believe juice fasting is the best protocol for Pitta types (Yarema et al., 2006). The Pitta person should not observe a fast for more than 4 days (Lad, 1993).

Of all the doshas, Kapha people are the most capable of fasting, primarily because they have the most moderate desire for food (Svoboda, 1998). Water-only fasting is the most beneficial for a Kapha type, largely because of their tendency towards obesity, mucous retention, and food addiction (Yarema et al., 2006). Kapha types are able to water fast for two or more weeks without much difficulty (Lad, 1993).

Most people are a combination of two or more doshas (such as vatta-pitta or kapha-pitta), but a vata-pitta-kapha is quite rare (Krishan, 2003). Due to this dynamic, the Ayurvedic practitioner is often considering a number of doshas when determining what type of fast is most appropriate for a patient. According to Vasant Lad (1993), “The lack of understanding of constitutional requirements may have detrimental effects” for the person who is fasting (p. 86).

Ayurvedic principles prefer regular, short-term fasting over infrequent, long-term fasting (Yarema et al., 2006). Fasting is generally not recommended for people who are too weak and is therefore not generally used to treat ill health (Frawley, 2000).

Fasting in Traditional Chinese Medicine Traditional Chinese medicine (TCM) is an ancient medical system that combines an understanding of the laws and patterns of nature with the human body (Traditional Chinese Medicine World Foundation, 2012). TCM is considered a form of alternative medicine in the United States, although some of its practices —such as acupuncture—have been accepted by health insurance companies (NCCAM, 2010). Other typical TCM therapies include acupressure, cupping, Gua Sha, Tui Na, moxibustion, herbal medicine, and Qigong (Reid, 1994). In TCM, these treatments are sometimes performed as an adjunct to fasting (Weidong, Sasaki, & Haruki, 2007).

Chinese Medicine and the Tao have been intertwined from the ancient beginnings of Chinese culture (Weeks, 2012). Taoism is a philosophical and religious tradition traced to prehistoric folk religions in China (Liu, 2006). In ancient Chinese medicine, fasting is an essential part of Taoist spiritual and medical traditions (Weeks, 2012). Both TCM and Taoism hold the belief that fasting is the key to attaining superior health and longevity (Tam, 1998).

In TCM, herbal preparations are sometimes used to suppress hunger during fasting as well as for their medicinal value (Eskildsen, 1998). The tenth century AD Sung Dynasty physician Chang Tsung-cheng recommended fasting combined with herbal colonics for a variety of medical and psychological problems (Reid, 1989).

Fasting has a long history of being practiced in Qigong, a tradition of meditation, breath work, movement, and awareness exercises that has been a formal branch of Chinese medicine for over 2,000 years (Reid, 1989). Medical Qigong is a modality of TCM that is widely understood in China but little known in the West (Liu & Chen, 2010). Medical Qigong uses the practices of Qigong to enhance the flow of chi, improve health, and treat disease (Alexander, 2011; Chen & Turner, 2004). In China, medical Qigong has been part of their national health plan since 1996 (Alexander, 2011).

There are thousands of different forms of Qigong. Researchers Kevin Chen and Floyd Turner (2004) claimed that some types of Qigong are less effective that others: “Although most *qigong* may bring health benefits to some degree, only medical *qigong* emphasizes the vital energy *(qi)* to help diagnose and take control of or eliminate illness or diseases, as well as prevent their onset” (p. 1). The type of Qigong that Chen and Turner referred to is Taiji Five-Element Qigong, one of the 14 forms recommended by the Chinese government. According to Chen and Turner, training and practice in Taiji Five-Element Qigong includes “gathering *qi,* magnifying *qi* energy and using it for self-healing with visualization and guided imaginary; plus supervised energetic fasting” (p. 1). This type of fasting is sometimes referred to as *Pi Gu.*

Pi Gu is an ancient fasting training method practiced in Qigong traditions (Ting, 2011). Pi Gu enables participants to remain in a fasting state for extended periods without being hungry and helps to increase energy (Tam, 1998). In his book *Pi Gu: The Way of Chi Gong Fasting,* acupuncturist Tim Tam (1998) said, Western fasting methods cannot be continued for long because they are not in any way united with Chi. How many people are able to fast one week without any food? But in the Pi Gu state people can last a week, a month, or sometimes a year. (Tam, 1998, p. 9) Pi Gu is a meditation technique that is used in different levels of fasting (Tam, 1998). In its simplest form, Pi Gu fasting calls for the elimination of all grains, meat, and processed foods from the diet. At the moderate levels, a person juice fasts and may eat some fruit and vegetables. The highest levels call for water and dry fasting, with dry fasting being the peak.

The Pi Gu discipline is still practiced today by TCM practitioners with fasting lengths varying from 7 to 45 days depending on the patient and the purpose (Dupuis, 2012). According to acupuncturist Chad Dupuis, “Part of the work here is to break emotional and biochemical addictions to food-eating out of habit, *etc.* and reseting/training the bodies metabolism so it works more efficiently” 2). One of the services Dupuis provides at his clinic, the Yin Yang House in Chattanooga, Tennessee, is supervised fasting according to the Pi Gu tradition.

In addition to learning Pi Gu methods from TCM practitioners, many people attend seminars. Pi Gu workshops are facilitated all over the world. At most workshops, participants are at different levels, with some eating simple foods, while others juice, water, or dry fast (Chia, 2012; Harmon, 2012; Tao Garden Health Spa & Resort, 2009). Additionally, there are different traditions of Pi Gu, which can also influence the type of fast someone does.

Fasting is also practiced in Tai Chi, a practice similar to Qigong that combines meditation and movement to improve and maintain health (Irwin, Olmstead, & Oxman, 2007). Like Qigong, there are many different forms of Tai Chi.

Tai Chi and TCM have been used together to treat patients in China for over 3,000 years (Chabner, 2010). Tai Chi instructor Weimin Kwauk (2007) described fasting in Tai chi as follows: Basically, there are several kinds of fasting. The first kind is where you eat nothing; you get your energy from meditation, from the universe, from nature. The second kind involves the consumption of liquids. You do not consume any cooked food or manufactured food; however, you can still have some fruits and nuts. Another style, similar to the second, is when you avoid eating food completely, taking combinations of herbs instead… The duration of fasting can vary from one day to a few days to a few months, and sometimes even years. (p. 33) Although fasting has been practiced in TCM for thousands of years, there are some schools of TCM that are opposed it, believing that fasting can damage the spleen (Whitlocke, 2006). According to acupuncturist and herbalist Bronwyn Whitlocke (2006), “Fasting is inappropriate within TCM dietary therapy because the Spleen requires predictability of meals” (p. 90).

Fasting in Traditional Tibetan Medicine The origins of traditional Tibetan medicine (TTM) go back to native shamans in Tibet who used herbs and fasting in their healing practices (Young, 2007). The Tibetan medical system combines principles from a variety of ancient medical systems, including Ayurveda and TCM.

Tibetan medical practices also include Buddhist religious principles. TTM embraces the traditional Buddhist belief that all illness results from the three poisons of the mind; ignorance, attachment, and aversion (Clifford, 1984). The Tibetan Buddhist approach to psychiatry is based on this premise (Clifford, 1984).

Tibetan medicine employs a complex approach to diagnosis, using techniques such as pulse analysis and urinalysis. TTM incorporates the use of herbs, minerals, and physical therapies, such as acupuncture, dietary modifications, and fasting (Kletter & Kriechbaum, 2001).

Fasting performs different functions within Tibetan medicine. Some protocols use fasting only in the case of acute illness (Dunkenberger, 1999) whereas others believe it is an essential part of the rejuvenation process (Clark, 2008). In the instance of acute illness, the intake of any type of food is stopped for one to three days. The ensuing fast consists of hot water, and sometimes herbs, minerals, meat. or rice broth (Dunkenberger, 1999).

Barry Clark, a physician and author on Tibetan medicine, studied under Pema Doije, one of the personal physicians of the Dalai Lama (Clark, 2008). Clark explained how the rejuvenation process of fasting in Tibetan medicine focuses on cleansing and relaxing the body. Prior to fasting, the participant has an oil massage, followed by a bath and a laxative. According to Clark, fasting without taking these steps was tantamount to “dyeing a stained cloth” (as cited in Zillmann, 2012, ¶3). Clark has personally undertaken 21-day fasts, consuming only herbs and minerals with hot water. He explained that fasting can improve mental acuity and help the participant to achieve enlightenment and paranormal states, such as clairvoyance (Zillmann, 2012).

Anthropologist Barbara Gerke pointed out that many Tibetan practices, such as fasting, have roots in religion and medicine (O’Keefe, 2010). Gerke described a Tibetan medicine fasting practice known as “essence extraction” or “chulens” (as cited in O’Keefe, 2010, ¶20). During this kind of fast, the individual subsists on extractions from various plants in the form of elixirs and tonics while on an isolation retreat.

Although Tibetan medicine is relatively unknown in the West, it is practiced by millions of people in Tibet, India, Nepal, Bhutan, Ladakh, Siberia, China, Mongolia, Russia, Europe, and North America (Bushell, Olivio, & Theise, 2009; O’Keefe, 2010). Physicians in the Soviet Union have incorporated TTM into fasting methods that have been developed over the past 40 years (Azhunova & Shantanova, 2001).

Fasting in Russia There were a number of figures that advanced the practice of fasting in pre-revolutionary Russia. In the late 1800s, professor V. V. Pashutin of the Saint-Petersburg Military and Medical

Academy contributed significantly to the development of therapeutic fasting (Kokosov, 2001c). Based on observations of fasting and malnutrition in Russian peasants, Pashutin launched a series of investigations into the metabolism of animals during insufficient feeding and subsequent refeeding (Benedict, Miles, Roth, & Smith, 1919). The experiments, which were conducted in Pashutin's lab, were also carried out P. M. Albitsky, and Pashutin discussed the research at length in his course lectures.

In 1895, I. A. Pashutin published his dissertation *The Metabolism of Animals During Insufficient Feeding and Subsequent Realimentation,* based on the work performed by Albitsky in the senior Pashutin's lab. At the time, this paper was considered to be among the best general discussions on the topic of malnutrition. In his dissertation, Pashutin (1895) raised the question as to how the vital processes might be affected if the normal diet were reduced by one-fourth, one-third, and one-half.

The primary focus of Albitsky's research was to study the effect of repeated periods of complete fasting—with and without water—and subsequent refeeding (Benedict et al., 1919). Albitsky noted that rabbits ate up to 1.5 times as much food during refeeding as was eaten normally and drank twice as much water to regain the weight that was lost during fasting. A marked change in oxygen consumption and carbon-dioxide excretion was also noted, which did not return to normal until the food intake was increased to prefast levels. Another significant finding was that there was little change in the vital processes and general health of the rabbits, even after being deprived of 50% of their normal food intake (Pashutin, 1895).

Some of the most interesting research on fasting and psychiatric disorders occurred in the 1950s when psychiatrist Yuri. S. Nikolayev began prescribing fasting therapy for patients with treatment-resistant and refractory schizophrenia. Nikolayev observed attenuation of accompanying somatic pathologies, including bronchial asthma (Kokosov, 2001c). Based on his work, the Ministry of Public Health Care commissioned the Research Institute of Pulmonology to investigate the possibility of using fasting therapy in allergic bronchopulmonary pathology, including bronchial asthma. Part of Nikolayev's fasting protocol included a 3 to 6 month long preparatory period during which 36 continuous hours of fasting were performed every week (Dmitriyev, 2001).

In the early 2000s, Russian researchers examined the psychological criteria and motives of individuals who volunteered to undergo fasting therapy (Ivanova & Karnyshev, 2001). Using a control group, the researchers compared responses from a group who were fasting, and a group who were not. The goal was to discover the psychological factors that influenced an individual's motivation to fast. The researchers concluded that the participants who chose to fast were highly motivated to improve their health, were more self-confidence, and believed in an ability to control their own health.

Aleksei N. Kokosov, a director at the Centre for Fasting in Saint-Petersburg, Russia, has been prescribing fasting therapy over 30 years, having spent 25 of them training physicians on how to supervise fasting patients (Kokosov, 2001b). Kokosov cited three main phases with regards to therapeutic fasting; 1) preparatory, 2) fasting proper, and 3) recuperative (restorative diet). According to Kosokov, the length of the fast is dependent upon the specific features of the target pathology and the therapeutic method applied. Furthermore, the duration of the recuperative period should comprise at least two thirds of the duration of the fast. Kokosov noted that the generally accepted method of fasting in Russia is water-only. However, water is only to be taken when the patient feels a need for it. Kokosov said that other fasting methods that are recognized as having therapeutic value include the dry fasting fractional method (Kokosov, 2001b).

Russian physicians have promoted the use of fasting in clinics and sanatoriums in the Republic of Buryatia since the early 1990s (Kokosov, 2001a). Fasting research has been conducted at the Goryachinsk resort and sanatorium in the Republic of Buryatia since 1994 (Batayeva, Sokolova, & Serebrennikov, 2001). Goryachinsk has fasted over 975 patients for a variety of health problems, including cardiovascular diseases, rheumatoid arthritis, gastrointestinal disorders, and obesity. The length of fasting at Goryachinsk is generally from 10 to 14 days. During the fast, patients drink distilled water and a wild rose decoction. It is interesting to note that Native American Indians have historically consumed wild rose decoctions for the laxative effect (Moerman, 2009).

Physicians in Russia sometimes use adjunctive therapies when treating patients with fasting, including Su Jok acupuncture and hydrotherapy (Afanasyev, 2001). Such therapies are generally used in conjunction with short-term fasting.

Fasting in Germany As discussed earlier, there were a number of German health practitioners that were influential in the promotion of fasting from the late 1800s to the early 1900s, most notably Adolf Just, Arnold Ehret, and Benedict Lust.

Otto Buchinger, Sr., a German physician, became well-known for advancing various methods of fasting, although the main type of fasting performed at the Buchinger clinics is primarily juice-fasting. In the early 1900s, Buchinger was one of the most prominent advocates of fasting in Austro-Germany. When he was in his 40s, Buchinger had suffered from inflammatory rheumatism that almost rendered him immobile (Stitz, 2010). By 1917, Buchinger was a father and had become an invalid. He had heard about water-only fasting from other doctors and decided to try a 19-day fast under medical supervision. In his memoirs, Buchinger later said the fast saved his life. Professionally, fasting became the focus of his work.

In 1920, Buchinger opened a fasting clinic in Bad Pyrmont, Germany, which is still in operation today. When Buchinger died at 89, his son, Otto junior, took over the clinic, while his daughter, Maria, founded other Buchinger clinics in Uberlingen on Lake Constance and in Marbella in Spain (Stitz, 2010).

Buchinger senior authored a number of books on fasting, primarily to promote it among his colleagues (Atkins, 2005). As the Buchinger clinics were passed down through generations of the family, the type of supervised fast offered at the facilities became mostly juice-fasting, the details of which are discussed in chapter one. Although there are numerous other fasting clinics throughout Germany, most of them use juice-fasting as well (Airola, 1974).

In the book *Therapeutic Fasting: The Buchinger Amplius Method,* Francoise Wilhelmi de Toledo and Hubert Hohler (2000) discussed the methodology that is involved in juice-fasting at the Buchinger program. Wilhelmi de Toledo is the wife of Raimund C. Wilhelmi, Otto Buchinger senior’s grandson. Together, the two oversee much of the operations at the Buchinger facilities.

Future Fasting in Complementary and Alternative Medicine There is a presupposition that conventional medicine is evidence-based, whereas CAM is not, an assertion that is bolstered by CAM modalities that lack research (Walach, 2009). This pits conventional medicine against CAM in a battle of the empirical versus the unproven. In spite of this, consumers have continued to demand CAM therapies and the percentage of those who currently receive CAM healthcare is at an all-time high. Wiese, Oster, & Pincombe (2010) said, "The history of the relationship between complementary medicine (CM) and mainstream health care has shifted from the early days of pluralism, through hostility and exclusion, to one of grudging acceptance" (p. 326).

Future models of CAM will influence the manner in which therapies that fall under this term are utilized. For example, acupuncture and chiropractic, still considered CAM treatments, are paid for by most insurance companies. In the future, more CAM therapies and modalities—such as therapeutic fasting—may be routinely covered by insurance.

In his article *The Future of Complementary and Alternative Medicine—Models of Integration,* Robert Leckridge (2004) outlined several possible models for CAM: The current definitions of complementary and alternative medicine (CAM) and orthodoxy are culturally and politically determined. They obscure the debate about holism and integrative care and they give therapies and therapists precedence over patients in the design of health care systems. This paper considers three current models of delivery of CAM and biomedical care in the world. These models are the market model, the regulated model, and the assimilated model. Each of these models is described and consideration is given to likely futures for each of them. A fourth model, the patient centered model is proposed, which shifts the power from therapists to patients and regulates products and services irrespective of CAM or biomedical definitions. Only this latter model is presented as the one likely to support the development of truly integrated medicine, explicitly for the benefit of patients rather than therapists or industries. (p. 413) Leckridge's proposal is important because it reflects the influence that consumers have in the development of medical models. It also presumes that consumers must know about a particular therapy in order to champion it. In order for fasting to become an accepted mode of therapy, people will first need to understand the extent to which it is currently practiced. Recent studies indicating the efficacy and safety of water-only fasting may garner well-deserved attention and serve as the foundation for a new generation of integrative medicine.

6

Research on Fasting and Mental Health

What the eyes are for the outer world, fasts are for the inner.

—MOHANDAS GANDHI (2001/1961, p. 9)

Research on water-only fasting for psychiatric disorders is limited and relatively obscure. Most of the studies on fasting and mental health are over 30 years old, are written in Russian or Japanese, or are out of print. Additionally, most of this research has lacked statistical control groups and psychometric measures.

The fact that the relationship between medical illness and psychological conditions has become one the most actively researched areas in behavioral medicine and health psychology suggests that fasting might reduce the symptoms of some psychiatric disorders by helping medical conditions that are associated with them (Dew, Cyranowski, & Pilkonis, 2009; Freedland & Carney, 2009).

Fasting and Schizophrenia

In the 1970s, Russian and Japanese researchers began publishing a series of studies on water-only fasting and mental health. The most widely publicized of these studies was the work of Yuri Nicolayev, a Russian psychiatrist and director of the fasting unit of the Moscow Psychiatric Institute (Boehme, 1977; Cott, 1971; Cott, 1974; Foster, 2006; Nicolayev & Rudakov, 1975).

In 1972, Nicolayev claimed to have used fasting to successfully treat over 10,000 patients, many of whom suffered from chronic refractory schizophrenia, noting a significant improvement in 65% of those treated (Nicolayev & Rudakov, 1975).

An estimated 30% of people with schizophrenia have refractory schizophrenia, which means their positive schizophrenia symptoms have proven resistant to treatment with antipsychotic drugs (Pai, Laidlaw, & Vella, 2012). Most psychiatric guidelines dictate that two or three treatments with typical or atypical antipsychotic drugs be unsuccessful before a patient's schizophrenia is considered refractory (Melnik, Soares, Puga, & Atallah, 2010).

New York psychiatrist Alan Cott spent two weeks observing Nicolayev's fasting treatments. After working with Nicolayev in Russia, Cott undertook his own fasting study at Gracie Square Hospital in New York with 35 schizophrenic patients, reporting that over 60% of those who completed the fast remained well, provided that they stayed on a special low-fat diet (Cott, 1971; Cott, 1974). Although the claims of Nicolayev and Cott are initially impressive, their research lacked statistical control groups. Moreover, psychometric measures were not used. However, their work bears mentioning because it is often cited in the discussion of fasting for psychiatric disorders.

Fasting and Depression

Russian studies have reported favorable results using fasting in the treatment of depression, but literature on this research is limited to secondary sources (Boehme, 1977; Gurwitsch, 1969; Jurkin, 1972; Newskij, Kitjan, & Zukanova, 1969; Zazak, 1969). Four of these studies were conducted in the 1970s and were discussed briefly in a 1977 article in the *Schizophrenia Bulletin.* All of the research lacked statistical control groups and psychometric measures. This work is mentioned because it represents the majority of research on fasting and depression.

During the same time period, Japanese researchers published a series of studies suggesting that fasting may alleviate the symptoms of depression (Suzuki, Yamauchi, Horikawa, & Yamagata, 1976; Suzuki, Yamauchi, Yamamoto, & Komuro, 1979). A 1979 review of several Japanese studies on fasting and mental health revealed the rich history of fasting in Japan:

> The fasting, practiced by the followers of Brahmanism was adopted by Buddhism in India, and following the introduction of Buddhism to Japan early in the 15 th century, the procedure of fasting was further

> refined into a Buddhist rite, spreading across the country along with Buddhism. However, it was not until 1889 when Osawa investigated a seminary for fasting in the Shinshoji Monastery of Narita that fasting received the attention of modern medicine. In 1930, Takahira published ‘A study of starvation’ reporting the findings of his physiological examination of more than 50 cases of fasting disciples. (Suzuki et al., 1979, p. 307)

The review examined data from three studies and claimed that, of 382 patients with a variety of psychosomatic problems and various psychopathologies, fasting therapy had an efficacy rate of 90% in 69 cases of depression, dropping to 87% at long-term follow up. The researchers suggested that fasting helps attenuate depression due to its profound effect on the brain. There were a number of problems with this study. To start, it was not a proper meta-analysis in that the authors did not use any statistical technique for amalgamating, summarizing, and reviewing the data. Another problem with the series of studies that were reviewed is the fact that the participants were not given pure water. Instead, patients were given a solution of pentose (glucose) and vitamins. Thus, these patients did not achieve ketosis.

The therapeutic fasting protocol that is set forth by the International Association of Hygienic Physicians (IAHP) (1995) calls for the use of only pure water, because IAHP believes that ketosis is necessary to induce a true fast effect. Without ketosis, IAHP asserts that many benefits of the fast are lost, such as the positive effects that are associated with lowering glucose levels in the body. With regards to research, the addition of any substance to the protocol of water-only fasting introduces another potentially confounding variable that cannot be controlled for. For example, it is not desirable to compare participants who are juice-fasting to participants who are water-only fasting because these two interventions are different and have different potential effects.

In 2011, researchers conducted a three-month clinical trial using calorie reduction of 300 to 500kcal/day combined with two days per week of fasting in 25 men (Teng et al., 2011). The men were divided into two groups and the control group received no intervention. Sleep quality was determined using the Pittsburgh Sleep Quality Index, and the Beck Depression Inventory II was used to measure mood. There were no significant changes in sleep quality between the groups as a result of the intervention. Because baseline depression scores in the subjects were extremely low to begin with, the decrease in scores from test one to test two was not significant in either group or between groups. With such a small sample, the researchers acknowledged that the study design needed to be implemented on a wider scale. With a larger sample, baseline depression scores might be higher, making a significant drop more likely.

In the fall of 2010, I conducted a study examining the use of water-only fasting to decrease the symptoms of depression (Fredricks, 2011). This mixed-methods study, including both quantitative and qualitative data, measured the degree of depression with the Beck Depression Inventory (BDI-II) and locus of control using Form B of the Multidimensional Health Locus of Control (MHLC) scales. Forty-two fasting participants were matched to forty-two comparison participants at testing time 1 for gender and level of depression according to the 4 BDI-II scoring categories of minimal, mild, moderate, and severe depression. The findings indicated a statistically significant difference between the groups [F(1,82) = 20.91, p < .001], that result demonstrating the efficacy of fasting as a potential treatment for decreasing symptoms of depression. In addition, Internal Locus of Control (IHLC) pretest scores were significantly higher for the intervention participants, that result indicating a stronger belief in the personal ability to directly impact health outcomes. In the qualitative Thematic Content Analysis, themes were identified from the participants' responses. The results of this research are presented in chapter eight.

Scientists have discovered some of the biological mechanisms that may explain how fasting alleviates the symptoms of certain psychopathologies, such as depression. For example, fasting has been shown to attenuate hypertension (Goldhamer et al., 2002) and improve arterial and heart health (Horne et al., 2008), both of which are strongly associated with the incidence of depression (Chellappa & Ramaraj, 2009; Jonas, Franks, & Ingram, 1997; Toker, Shirom, & Melamed, 2008). It does this primarily by thinning and reducing serum glucose levels (Muliar et al., 1984; Stewart & Fleming, 1973). Elevated levels of glucose in the blood are associated with diabetes, arterial inflammation, and plaque formation. The following are examples of research that has examined the association between depression and certain medical conditions.

Fasting, Hypertension, Heart Health, and Depression

Research has shown a high correlation between depression and medical problems, most notably hypertension and cardiovascular conditions (Geisler et al., 2012). In the 1970s, researchers at the Centers for Disease Control and Prevention (CDC) collected data for a landmark study entitled “National Health and Nutrition Examination I Epidemiologic Follow-up Study (NHANES)”

Afterwards, numerous studies were conducted using this data. In 1997, a group of researchers used the NHANES data to compare psychological tests of almost 3,000 adults with normal blood pressure over a period of 7 to 16 years (Jonas et al., 1997). They found that people suffering from depression at the start of the study were two to three times more likely to have developed hypertension.

Another study that used the NHANES data identified depression to be an antecedent to coronary heart disease (CHD) (Ferketich, Schwartzbaum, Frid, & Moeschberger, 2000). The researchers concluded that depression was associated with a markedly increased risk of CHD in both men and women. These two studies have problems that are inherent in much of the research using the NHANES data. Because of the studies’ use of comparison of means bounded by large and overlapping confidence intervals, the results can be insensitive and can encourage the production of a high false-negative rate or Type II error.

Fasting, Obesity, and Depression

Obesity appears to be another risk factor for depression (Atlantis, Goldney, & Wittert, 2009; Pi-Sunyer, 2009). A 2009 meta-analysis of past research reported that obesity was a significant risk factor for and contributor to depression (Pi-Sunyer, 2009). The study’s author used a systematic search strategy to identify published literature between 1995 and 2008 that reported data from prospective longitudinal studies of obesity and comorbid medical conditions and then performed a meta-analysis. According to the researchers, “Clinicians should be aware that the association can occur in both directions” (p. 871).

In summary, although obesity can contribute to depression, depression can also contribute to obesity. The major limitations of this study were the likelihood of bias in the systematic search strategy and the potential for mismanagement of such a large amount of data. Furthermore, all of the limitations of meta-analytic research apply to this study. Specifically, there is a bias due to the fact that published studies tend to report significant findings, whereas unpublished research tends to involve non-significant findings. Meta-analyses typically only include published studies, which contributes to an inflated effect size.

Depressed people who seek comfort in carbohydrate-rich food are especially vulnerable to developing metabolic syndrome, a disorder that is characterized by abdominal obesity, atherogenic dyslipidemia (blood fat disorders), hypertension, insulin resistance or glucose intolerance, a prothrombotic state (e.g., high fibrinogen or plasminogen activator inhibitor-1 in the blood), and a proinflammatory state (e.g., elevated C-reactive protein in the blood) (Koponen, Jokelainen, Keinanen-Kiukaanniemi, Kumpusalo, & Vanhala, 2008). In many instances, fasting helps these conditions, thus treating metabolic syndrome (Goldhamer et al., 2002; Michalsen et al., 2005; Wechsler at al., 1984).

Fasting and Brain Function

The way in which water-only fasting alleviates depression may have to do with how fasting acts on the brain. During water-only fasting, the metabolic state of ketosis is one of the primary processes that affects brain function. Normally, the carbohydrates in food are converted into glucose, which is then transported around the body. Glucose is particularly important in fueling brain function. When an individual fasts and there are no carbohydrates to use as a fuel source, the liver converts fat into ketone bodies, which eventually pass into the brain and replace glucose as an energy source (Freeman, Kossoff, & Hartman, 2007).

Fasting and Brain Chemistry

Ketosis changes the balance of two neurotransmitters, gamma-aminobutyric acid (GABA) and glutamate, in the brain (Vamecq, Maurois, Bac, Delplanque, & Pages, 2007). When an individual is fasting and burning fat, the body makes less glutamate. On the other hand, when someone is eating, the burning of glucose causes the body to make more glutamate (Yudkoff et al., 2006). Research has associated both GABA and glutamate with depressive disorders (Daniele et al., 2012).

Researchers from the University of Pennsylvania School of Medicine focused on the metabolic interactions between neurons and astrocytes (cells in the brain and spinal cord), and found that two mechanisms were in play during ketosis: increased cerebral GABAergic tone and decreased glutamatergic tone (Yudkoff et al., 2004; Yudkoff et al., 2006).

German researchers found that when they treated 28 patients with fasting, catecholamine activity increased significantly (Michalsen, Schlegel, Rodenbeck, Ludtke, Huether, Teschler, & Dobos, 2003). Catecholamines are chemical compounds made by the brain, nerve tissue, and the adrenal gland. They arouse and excite us mentally, emotionally and physically, and help us to focus and to be attentive. The catecholamines include dopamine, norepinephrine, and epinephrine, which is also known as adrenaline.

Two catecholamines, norepinephrine and dopamine, act as neurotransmitters in the central nervous system and as hormones in the blood. Catecholamines are important for good mental health, especially as we grow older and the output of these neurotransmitters gradually declines. Research has linked depression to catecholamine function, and scientists have developed a theory called the *catecholamine hypothesis* to explain how catecholamines affect emotional disorders (Lambert, Johansson, Agren, & Friberg, 2000; Schildkraut, 1965). According to this hypothesis, depression is associated with a deficiency in norepinephrine at functionally important receptor sites in the brain. This is turn causes a decrease in catecholamines. In the German study on fasting, urinalysis was used to measure catecholamine levels, which increased while fasting and decreased to baseline levels after the fasting concluded, suggesting that fasting increased catecholamine production. The main limitation of this study was its lack of a statistical control group.

A 2005 study at the National Institute on Aging examined fasting and brain function and found that fasting had beneficial effects on the brain and cardiovascular system of rats due to increased brain-derived neurotrophic factor (BDNF) signaling in the brain (Mattson & Wan, 2005). BDNF is active in the hippocampus, cortex, and basal forebrain—areas that are vital to learning, higher thinking, and long-term memory (Bekinschtein et al., 2008). The results of BDNF data obtained were generalized in a limited manner to human participants. Eugene G. d’Aquili, a research psychiatrist who specialized in studying the effects of religious phenomenon using brain image scans, suggested that these same areas of the brain were involved in spiritual experiences (Newberg, D'Aquili, & Rause, 2001).

The interplay between neurotransmitters and neurochemistry is not fully understood (Horgan, 1999). For example, the development of antidepressant drugs led to theories of neurotransmitter function to explain how the symptoms of depression might be affected by these drugs. Entire classes of drugs were manufactured and marketed based on the supposition—as opposed to actual evidence—that the drugs improved neurotransmitter function (Lacasse & Leo, 2005). For example, at present, SSRIs (selective serotonin re-uptake inhibitors) are the most commonly prescribed antidepressant medications in the United States (Farber & Black, 2005).

In an article published in *PLoS Medicine,* researchers Jeffrey Lacasse and Jonathan Leo (2005) challenged the credibility of using SSRIs as antidepressants. They argued that SSRIs are a largely scientifically unproven treatment choice for depression. The authors questioned the rationale behind the widespread prescribing of SSRIs as antidepressants, and said, "Given the multifactorial nature of depression and anxiety, and the ambiguities inherent in psychiatric diagnosis and treatment, some have questioned whether the mass provision of SSRIs is the result of an over-medicalized society" (Lacasse & Leo, 2005, p. e392). Lacasse and Leo were quick to point out that the use of SSRIs is predicated on the serotonin hypothesis, and "In fact, there is no scientifically established ideal 'chemical balance' of serotonin, let alone an identifiable pathological imbalance. To equate the impressive recent achievements of neuroscience with support for the serotonin hypothesis is a mistake" (p. e392). Based on this, research and reviews from a number of scientists have suggested that antidepressants are prescribed largely on anecdotal evidence shared between a patient and his or her doctor (Geddes, Freemantle, Mason, Eccles, & Boynton, 2005; Horgan, 1999; Lacasse & Leo, 2005; Thase, 2011; Valenstein, 1998).

Fasting and Brain Waves

A study of therapeutic water-only fasting for psychosomatic diseases looked at changes in the brain waves from 262 fasting patients and noted a slowing and synchronization of alpha waves, together with an increased incidence of theta waves (Suzuki et al., 1976). This translated into a more relaxed state and an increased introspective state of awareness.

Similar brain wave patterns have been observed in Zen meditators (Kasamatsu & Hirai, 1966) and in participants practicing yoga (Banquet, 1973). This correlation suggests that fasting and meditation have some similar psycho-physiological effects on the brain and nervous system. The researchers concluded that fasting provided an option to the use of antidepressants and that, "fasting therapy may be a kind of shock therapy, because it brings about a gradual development of hypoglycemia as well as many other physiochemical changes in the internal environments of the human body" (Suzuki et al., 1976, p. 256). The major limitations of this study were the fact that participants were given a vitamin supplement in addition to water, which effects generalizability. In addition, there was no control group. Further information on how fasting affects the brain is presented in chapter seven in the section on fasting and altered states of consciousness.

Fasting, Mental Clarity, and Performance

Fasting has long been used as a means to sharpen mental acuity. In ancient Greece, Socrates, Plato, and Aristotle fasted regularly to stimulate mental powers (Johnson, 1973). Pythagoras required his students to fast for 40 days in preparation of receiving his highest teachings (Suvarna & Nirgun, 1974).

In 1912, attorney Agostino Levangin underwent a 30-day water-only fast at Harvard to prove that his mental acuity improved by fasting (Langfeld, 1914). He was subjected to a regimen of daily tests that measured his I.Q. and visual acuity. Although he did have some improvement in mental clarity, there was no significant change in his I.Q. scores. His vision showed the most improvement, doubling from his pre-fast value.

Although some research has suggested that alertness and clarity improved during fasting, there was some indication that it was a transient experience (Fredricks, 2011). Studies examining performance during Ramadan fasting have indicated that productivity and alertness may decline during a fast. However, a contributing factor to the decline that was found in these studies may be the fact that the participants carried out everyday activities while fasting. These studies, conducted during Ramadan when practicing Muslims fast from sunrise to sunset for one month, found an increase in traffic accidents. The researchers noted that traffic accidents peaked during the month, alongside a reduction in working hours (Roky, Houti, Moussamih, Qotbi, & Aadil, 2004). Other research revealed that traffic injuries were the second major cause of death in the United Arab Emirates, where Ramadan is a common practice, with the bulk of the accidents occurring between 8:00AM and 2:00PM during the fast (Bener, Absood, Achan, & Sankaran-Kutty, 1992). The researchers noted that traffic injuries were significantly lower during similar time periods in countries with non-practicing Muslims.

The Benedictine monks have long believed that fasting greatly enhances performance (Muller, 2010). Additionally, people involved in sports usually fast briefly before events because strenuous activities on a full stomach is ill-advised. In a 2008 study, researchers tested men who did endurance training without eating versus those who ate (De Bock et al., 2008). The researchers noted that the athletes who hadn't eaten experienced a spike in the amount of proteins needed to process fat, which meant that their bodies had been primed through fasting to burn more fat.

A 2003 pilot study in Germany demonstrated that a 1-week fasting period in 13 human subjects promoted quality of sleep, a decrease in sleep arousals, and improved daytime performance (Michalsen, Schneider, Rodenbeck, Ludtke, Huether, & Dobos, 2003). Other research has suggested a decrease in daytime alertness, mood, and wakefulness during the fasting month of Ramadan (Bener et al., 1992; Roky, Iraki, HajKhlifa, Lakhdar Ggazal, & Hakkou, 2000; Roky et al., 2004; Roky et al., 2003). In terms of physical performance, speed, agility, and endurance declined in professional soccer players observing Ramadan (Zerguini, Kirkendall, Junge, & Dvorak, 2007). In addition, their performance remained low for two weeks post-Ramadan. A major limitation of in the Ramadan research is that fact that fasting can be the most mentally challenging during the first 48 hours of the fast. Since Ramadan fasting only lasts for about 12 hours of each day, the brain never goes into a state in which it is no longer glucose-dependent.

Fasting and Alzheimer's Disease (AD)

Alzheimer’s disease (AD) is a neurodegenerative disorder that is characterized by progressive decline in cognitive function and is associated with the neuropathological hallmarks of amyloid beta-peptide plaques (Abeta) and neurofibrillary tangles. Patients who have AD exhibit progressive impairment of memory accompanied by psychiatric disturbances (Lyketsos et al., 2002; Mattson, 2004; Steffens et al., 2006). Because aging is the major risk factor for AD, and dietary energy restriction can retard aging processes in the brain, researchers have examined the effects of two different energy restriction regimens; calorie restriction and intermittent fasting.

In one study, mice that were fed every other day were more protected from AD and diabetes than mice on low-calorie or unrestricted diets (Anson *et al.* 2003). Both the control and intervention (fasting) group consumed the same amount of calories in the long term. A third group of mice were fed a low-calorie diet with 40% fewer calories. When given a neurotoxin that damages nerve cells in a manner that mimics the damage in AD, the fasted mice had fewer damaged nerve cells than mice on unrestricted or low-calorie diets. Additionally, the fasted mice had lower insulin levels, implying a lower risk of developing diabetes. Other research has found similar results, suggesting that fasting may help protect neurons against the adverse effects of Abeta and tau pathologies on synaptic function (Halagappa et al., 2007). In addition to Abeta, the second major finding in the Alzheimer’s brain is neurofibrillary tangles which are composed of a protein called tau protein. Tau proteins play a crucial role in the structure of the neuron. In people with AD, tau proteins cause abnormality through overactive enzymes. This results in the formation of neurofibrillary tangles, eventually leading to the death of the cells. High levels of tau protein in the fluid that bathes the brain are also linked to poor recovery after head trauma, which may explain why research has suggested that fasting accelerates recovery from head trauma (Davis, Pauly, Readnower, Rho, & Sullivan, 2008).

An early feature of AD is a region-specific decline in brain glucose metabolism. Unlike other tissues in the body, the brain does not efficiently metabolize fats, so the human brain relies almost exclusively on glucose as an energy source (Henderson, 2008). Therefore, inhibition of glucose metabolism can have a profound effect on brain function. In patients with AD, this hypometabolism has become an important area of research. One promising approach has been to supplement the normal glucose supply of the brain with ketone bodies, which include acetoacetate, beta-hydroxybutyrate, and acetone. As discussed earlier, ketone bodies are produced from fat stores when glucose supplies are limited, such as during prolonged fasting. In research, the introduction of ketone bodies has demonstrated efficacy in animal models of neurodegenerative disorders and in human clinical trials that included AD (Henderson, 2008). Much of the benefit of ketone bodies can be attributed to their ability to increase mitochondrial efficiency and supplement the brain's normal reliance on glucose. Research into the therapeutic potential of ketone bodies and ketosis represents a promising new area in AD research.

A 2010 study in Spain suggested that fasting may be able to slow aging and prevent dementia (Tajes et al., 2010). In mice that were genetically programmed to have a shorter lifespan, fasting every other day corrected specific protein deficits in the brain. The fasting was found to help replenish proteins that were important contributors to brain cell survival and growth.

Intermittent fasting has been found to affect energy and oxygen radical metabolism, as well as cellular stress response systems, in ways that protect the neurons against genetic and environmental factors to which they would otherwise succumbed to during the aging process (Martin, Mattson, & Maudsley, 2006). Further research into the effects of fasting on the aging of the nervous system may help lead to the development of a model of fasting for preventing and treating neurodegenerative disorders.

It is worth noting that many people, including doctors, confuse a calorie-restricted diet with fasting. Fortunately, researchers tend to use the correct terminology and do not make this mistake.

Fasting and Stress Management

Research has indicated that fasting can be an important part of a stress management program. Experiments conducted at the National Institute on Aging suggested that skipping meals caused significant and lasting reductions in blood sugar levels, blood pressure, and heart rate in rats, even if the intervention began in adulthood (Wan, Camandola, & Mattson, 2003). Other improvements included weight-loss, resistance to stress, and increased life span by one-third. The study found that the rats that skipped meals were just as active during the day as those that ate, although the rats that skipped meals were less active at night. The researchers noted that every-other-day fasting greatly improved the body's ability to cope with stress by reducing the levels of stress-activated hormones that are known to trigger heart attacks. Another mechanism of every-other-day fasting is that it activates certain proteins designed to protect the body against stress. This coincides with research that reported that people who are fasting sleep better, have better concentration, more vigor, and are less likely to get upset during the day (Hartman, Pezzoli, Hellmann, Suratt, & Thorner, 1996; Michalsen, Schneider, Rodenbeck, Ludtke, Huether, & Dobos, 2003).

Fasting and Chronic Fatigue Syndrome

Although chronic fatigue syndrome (CFS), also known as myalgic encephalomyelitis (ME), is classified as a physical illness, some experts have suggested it should be considered a mental illness (Sykes, 2002; Ware, 1993). The generally accepted definition of CFS is a significantly debilitating group of disorders defined by persistent fatigue accompanied by other symptoms for a minimum of six months, not substantially relieved by rest, nor caused by other medical conditions (Centers for Disease Control and Prevention, 2010). Because the exact etiology of CFS is unknown, most treatments are ineffective.

Many patients who experience CFS as a physical illness say that they previously suffered from a bad viral attack, presumably influenza, from which they never fully recovered (Sykes, 2002). Medical scientists who have examined the biology of CFS have cited evidence of biological abnormalities of the central nervous system and the immune system (Komaroff, 2000). However, researchers have not yet been able to establish an undisputed physical basis for the continuation of symptoms of CFS. Some experts therefore conclude that the illness must be caused by mental or psychological problems and hence should be classified as a mental illness (White, 1990).

CFS patients frequently suffer from depression (Santhouse, Hotopf, & David, 2010). A Japanese case study at Kagoshima University found that fasting, when combined with cognitive behavioral therapy, alleviated the symptoms of a chronic fatigue syndrome patient (Masuda, Nakayama, Yamanaka, Hatsutanmaru, & Tei, 2001). According to the researchers, natural killer cell activity and serum acylcarnitine levels normalized after fasting therapy. Additionally, the patient reported an increased feeling of well-being. Although therapeutic fasting might be an effective treatment for CFS, the results may be inconsistent due to the fact that not all CFS patients have the same cause of their illness.

Fasting and Relationships

In the field of mental health, psychotherapy and counseling often focuses on personal relationships. Fasting—perhaps more than any other spiritual practice—has the power to create powerful shifts in relationships. Physician Rex Russell (1998) told a story about a couple from Kansas with a 12-year-old autistic son. After a three-day fast, their son responded to them for the first time. The couple, who were both physicians, said that the fast helped them to discover that their son had mental abilities far beyond what they had previously realized.

In Christian traditions, fasting has been used as a means to affect relationships in a variety of ways. In their book *Fasting Can Change Your Life,* Elmer Towns and Jerry Falwell (1998) discussed how a young couple, unable to have children, fasted and prayed to conceive a child. Although they were still unable to have children, a young woman in another place conceived at the exact time the couple had been fasting, and they adopted the child ten months later.

Those who have fasted for the benefit of others report a feeling of incredible peace and of being uplifted (Gallentine, 2011; Hickey, 2006; Towns, 2010). In Christianity, the process of intercession involves using fasting and prayer on behalf of others. Cindy Ross (2003) said, “Intercession is prayer and/or fasting especially for *someone else.* Prayer, fasting and intercession intertwine because their purpose is to get a response from God” (p. 12).

Many other religious and spiritual traditions use fasting to influence personal relationships and as a way to help others. Hindu women fast for their sons and husbands (Denton, 2004), Muslims view fasting as a practice of social solidarity (Ryan, 2005), and Native Americans have historically fasted for the benefit of the entire community (Rogers, 1976).

Hunger striking is volunteering to fast as a method of political protest, usually against an unfair or unjust act, during which participants fast with the objective of achieving a specific goal (Keneally, 2011). Often the injustice is committed against someone other than the person or the group who is hunger striking. In this manner, the hunger striker is fasting in an effort to assist others.

Fasting and Grief

Grief is a normal reaction to loss that involves expending physical and emotional energy. Grief can be particularly profound when the loss is someone or something to which an attachment or bond has been formed. Most people think of grief as an emotional response to loss, but grief also has physical, cognitive, behavioral, social, philosophical, and spiritual dimensions (Freed, Yanagihara, Hirsch, & Mann, 2009; Kubler-Ross & Kessler, 2007). While the terms *bereavement* and *grief* are often used interchangeably, bereavement actually refers to the *state* of loss, whereas grief is the *reaction* to loss (Rando, 1988). Bereavement is the process of grieving and letting go of a loved one who has died (McDonald, 1985).

There is a recognized difference between normal grief and complicated grief by mental health professionals (Shear, 2012). Normal grief can combine distressing moods and turbulent, even confusing thoughts (Ross & Kessler, 2007). The duration of normal brief is typically about six months to one year, depending on the situation. After the death of a loved one, it is not uncommon for symptoms to last for a year or longer while coping and adjusting to a different life.

Complicated grief is a recently recognized condition that occurs in approximately 7% of bereaved people (Shear, 2012). People with complicated grief ruminate about the circumstances and consequences of the death of a loved one (Bonanno, 2006). In response to their inability to comprehend the finality of the loss, they partake in excessive avoidance of reminders and are frequently overwhelmed by intense emotions (Shear, 2012). It is important that a person with complicated grief receive treatment not only because it produces tremendous sadness, but also because it has been identified as a contributing factor in psychiatric hospitalizations, suicide, and the use of outpatient mental health services (Fujisawa et al., 2010; Tal Young et al., 2012).

It is worth noting that the treatment and categorization of grief and bereavement are not without controversy in the mental health field

(Bonanno, 2006; Shear et al., 2011). Bereavement is a diagnostic category that is currently identified with a V code in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (American Psychiatric Association [APA], 2000). In the DSM-IV, V codes identify conditions other than a disease or injury, but are not necessarily a primary diagnosis. The American Psychiatric Association (APA), the publisher of the DSM, has proposed two important changes to bereavement in the next edition: 1) the removal of the bereavement exclusion in the diagnosis of major depression, and 2) the addition of complicated grief as a new diagnosis (APA, 2012). In an article in the *New England Journal of Medicine,* psychiatrist Richard Friedman (2012) responded to this proposal:

> In removing the so-called bereavement exclusion, the DSM-5 would encourage clinicians to diagnose major depression in persons with normal bereavement after only 2 weeks of mild depressive symptoms. Unfortunately, the effect of this proposed change would be to medicalize normal grief and erroneously label healthy people with a psychiatric diagnosis. And it will no doubt be a boon to the pharmaceutical industry, because it will encourage unnecessary treatment with antidepressants and antipsychotics, both of which are increasingly used to treat depression and anxiety. (p. 1855)

This controversy highlights the clinician’s difficulty in diagnosing and treating people who have complicated grief. It also suggests that the APA’s newly proposed diagnostic criteria might encourage doctors to prescribe antidepressants to treat bereavement and grief. Of course, it is reasonable to assume that this is already occurring. As discussed earlier in this chapter, research has indicated that antidepressants are currently prescribed primarily on the basis of anecdotal evidence that is shared between patient and doctor (Geddes et al., 2005).

Since 50% of all depressed patients fail to respond to antidepressant medication of any kind, these drugs would most likely have a similar failure rate in treating complicated grief and associated disorders (Loftis, 2011). Based on this body of research, as well as the fact that fasting has been used for thousands of years as an effective intervention for grief, fasting may represent a suitable alternative as a treatment for complicated grief.

The primary way in which fasting can help the grieving process is by helping the person to reframe their attachments. The two theories that are the most applicable to this dynamic are attachment theory and the concept of non-attachment.

Attachment theory describes the formation of bonds in long-term relationships (Waters & Waters, 2006). John Bowlby (1958) formulated the basic tenets of the theory and it was expanded by other researchers, including Mary Ainsworth (1973). According to Saul McLeod (2009), “Attachment is a deep and enduring emotional bond that connects one person to another across time and space… Attachment does not have to be reciprocal. One person may have an attachment with an individual which is not shared” (11). Because attachment does not require reciprocity, it can be formed with objects, such as food. In their article, *Attachment to Objects as Compensation for Close Others’ Perceived Unreliability,* Keefer, Landau, Rothschild, and Sullivan, (2012) explained this phenomenon:

> Attachment theory posits that close interpersonal relationships provide people with psychological security across the lifespan. Research shows that when people perceive that close others are unreliable, they may seek alternative, non-social sources of security [e.g., food] . . . attachment to objects compensates for threatened attachment security when close others are unreliable. (p. 912, brackets added)

Bowlby intended for attachment theory to evolve over time. He believed that researchers with different theoretical backgrounds had much to contribute to the theory. Thus, the ideas that have shaped attachment theory have a long developmental history.

Psychologists have proposed two main theories that are considered to be important in how attachments are formed: 1) The learning/behaviorist theory of attachment (Dollard & Miller, 1950), and 2) The evolutionary theory of attachment (Bowlby, 1958; Harlow & Zimmermann, 1958). The former believes that the basis for the learning of attachments is the provision of food, whereas the latter holds that the determinant of attachment is not food but care and responsiveness (McLeod, 2009). For people who have an internal representation in which food equates to love, the boundaries can become blurred (Roth, 1992). This means that, in either theory, attachment can be associated with the provision or removal of food. For example, if the evolutionary theory of attachment is correct in that it is the sensitive response and security of the caregiver that is the most important (as opposed to the provision of food), a person who experiences food as a caregiver will experience the loss of food as the loss of a caregiver. Based on this supposition, either theory of attachment explains how attachments can be profoundly challenged during fasting.

Another theory that is central to the effect fasting has on attachments is the concept of non-attachment. Non-attachment is a philosophy that is often attributed to Buddhism but is actually a central theme in all three principle Indian religions: Hinduism, Jainism, and Buddhism (Radhakrishnan & Moore, 1967). It is traced back to the meditations of the Upanisadic sages as well as the mystic saints (Agrawal, 1982). In the book *Philosophy of Non-Attachment: The Way to Spiritual Freedom in Indian Thought,* M. M. Agrawal (1982) said, “The concept of non-attachment is an integral part of a whole scheme of concepts constituting the Indian view of the world” (p. 6). Agrawal explained the difference between attachment and non-attachment as follows:

> It’s opposite ‘attachment’ is conceived by the thinkers as a sort of psychic cement which holds together various elements of the empirical self by relating the individual ego to the day-to-day world of events and actions. Without this cement the empirical self will, as it were, simply wither away, and whatever, if anything, remained of the individual will return to the *transcendental.* Yet, non-attachment and its consequent self-annihilation are, according to the sages, just the things that one ought to seek out. (p. 1)

In Jainism, the requirement of non-attachment *(aparigraph)* is based on avoiding actions that lead to attachments to the physical world (Matthews, 2010). Rigorous fasting is used to loosen these bonds. Jains believe that the extreme form of non-attachment is fasting to death *(sallekhana).* These requirements are accepted by people who choose to become Jains. Although the fasting practices in Hinduism and Buddhism are not as stringent as those in Jainism, fasting is still considered a primary means in which one achieves non-attachment (Thorner, Raj, Krishnaraj, & Trust, 2000).

Fasting has been used as a means to process grief in numerous religious and spiritual traditions, most notably in Christianity, Judaism, and Amerindian traditions (Blumensohn, 1933; Berghuis, 2007). Additionally, there are references to ancient Greeks who used fasting in response to grief. Around the eighth century BCE, Homer, the ancient Greek poet, wrote *The Iliad* and *The Odyssey,* which contain stories about fasting (Homer, 2007). In *The Iliad,* Homer told the tale of Achilles, who—saddened by the death of a comrade—vowed to fast to avenge his passing. The *mourning fast* has long been used as a means of alleviating feelings of grief. Hutton Webster (1973) described this phenomenon as follows, “The physical repugnance of food after experiencing grief, fear, or other strong emotions, would tend to become a conventional abstinence, as the symbol, and sometimes pretense, of such emotions. Doubtless the mourning fast often arose in this manner” (p. 164).

Although grieving and bereavement are considered psychological processes, research in this area is often conducted in a theological context. Fasting as a sign of grief or mourning is an area of interest in Biblical studies (Berghuis, 2007). One often cited scripture refers to David, who after hearing that Saul had died, tore off his own clothes and proceeded to fast (2 Samuel 1:12 New International Version).

In the Old Testament, fasting in response to grief is a common phenomenon. When tragic events occurred in ancient biblical communities, entire populations were expected to fast. For example, mandatory fasting was proclaimed during periods of drought and locust plagues (Jeremiah 14-1-12; Joel 1:14, 2:12-15 New International Version). There are also frequent references to fasting as a personal response to sorrow, as was the case with Hannah, Job, David, and other Psalmists (1 Samuel 1:7-8, 20:34; Job 3:24; Psalms 42:3, 102:4, 107:1718 New International Version). Andrew Hallner (1918) described Daniel’s fast as follows:

> Daniel mourned and fasted for three full weeks. He fasted because his great sorrow for his people and God’s church affected his appetite so he could not eat. A fasting, having its roots and causes in heart piercing sorrow and heart-rending affliction, is especially acceptable and pleasing to God. (p. 160)

Theologian Kent D. Berghuis (2007) summed up the Christian mourning fast in this way, “This type of fasting is possibly the most basic expression. This shows fasting’s role as part of the overall human experience” (p. 19).

In Christian traditions, fasting has been used to assist in the mourning of many different types of losses. In addition to the loss of a loved one, there are other losses that can cause grief, including the loss of employment, loss of a home, and loss of a relationship. Rosezine B. Wallace (2005) described how fasting transformed her grief after a divorce:

> Did you know that fasting helps in the mending of a broken heart? It really does. I was visiting a church one Sunday morning trying to hold it together. The pastor began a series of teachings on fasting. He talked about fasting for the mending of a broken heart. His every word cut into the bone and marrow of my hurt and wounds until I was hysterical in tears. God spoke directly to me in such a way that it changed my life. I began a progressive forty-day fast immediately. During this time, the use of a scripture book, prayer and fasting worked miracles in the health of my countenance. The road to recovery from insecurity, which produced anger and fear, was the road of restoration in fellowship with God. (p. 27)

In the book *Fasting: The Ancient Practices,* theologian Scot McKnight (2009) referred to the mourning fast as “body grief” because of the way it involved the body:

> Body grief is at the foundation of all fasting practices, and if we learn to think of fasting as a response to a grievous sacred moment, it all falls into place… Why fast when someone dies? Because our respect for the person who has died is so immense and our grief is so great that indulgence in any kind of pleasure desacralizes that respect and pain. (p. 52)

When an individual fasts, there is often grief that is associated with the loss of food. If the person is also grieving the loss of a loved one, the new grief that is related to the loss of food can accentuate their bereavement. Additional grief may be stimulated if the individual has longstanding sorrow over the loss or absence of a childhood caregiver. This may seem like an unfavorable response, but it can actually create a positive healing environment by reframing thoughts and feelings that are associated with multiple losses.

Because fasting is a respected method for helping grief, there are a number of fasting retreats that offer programs to help with the grieving process (Nurturing Nest, 2012; Sacred Springs Retreat, 2012; School of Lost Borders [SLB], 2012). One of the best known retreats is “Grief, Loss and Illness: A Journey into Healing” offered by the School of Lost Borders in Big Pine, California (SLB, 2012). It is a 7-day ceremony that contains an optional fasting period based on medical and personal needs. Meredith Little, one of the co-founders of the School of Lost Borders, commented on how their retreat can help with grief:

> The land around us (and within us) teaches with each passing season, and with each flood, drought, fire and storm, that out of change, crisis and a dying to what was, there appears a new story of form and adaptation. And that how we respond and integrate change into the fabric of our ongoing story colors the character of what comes next. (SLB, 2012, ¶1)

What Little is referring to is the idea that bereavement and grief can ultimately be a positive experience and contribute to our personal development in a constructive way. With the appropriate rituals and compassionate guidance, we are afforded an opportunity to reframe the memories of loved ones and other losses and continue the relationship in our hearts. In this manner, fasting can help to heal a broken heart by softening the hardness that is created by deep loss.

Conclusion

Therapeutic fasting has been primarily used in the treatment of medical conditions. In the future, psychotherapists may routinely recommend supervised fasting for clients with certain psychiatric disorders, such as anxiety, depression, and complicated grief. Fasting may also be a useful psychotherapeutic intervention for clients who have reached an impasse in therapy and are in need of a paradigm shift. When utilized in this way, fasting may represent a way to heal in a manner that traditional psychotherapy cannot do alone. This may seem like a radical assertion, but it is already occurring in group therapy settings on vision quests facilitated by psychotherapists throughout the world (Animas Valley Institute, 2012; Brown, 2012; Davis, 2012; Plotkin, 2003; Wisdom University, 2012). Vision quests have long been advocated by psychotherapists for those who are seeking spiritual growth, expanded consciousness, and exceptional human experiences (Cortright, 1997; Drury, 2011; Grof, 2009).

7

Fasting and Transpersonal Psychology

As deep fasts progress, as the veil between us and the spiritual world thins, the heart begins to perceive the hidden face of the sacred within everyday things.

—STEPHEN HARROD BUHNER (2012, p. 7)

As a spiritual practice, fasting has been used as a method of transformation in almost every religion and spiritual tradition. Despite these antecedents, the association between fasting and transpersonal psychology has yet to be fully explored. Using existing literature, this chapter focuses on the transformative characteristics of fasting as explained by the some of the basic tenets of transpersonal psychology. Additionally, the relationship between fasting and transpersonal psychology is examined, including its connection with self-realization, peak experiences, altered states of consciousness, and other exceptional human experiences.

Transpersonal psychology is a school of psychology that studies the self-transcendent and spiritual aspects of the human experience (Tart, 1975). According to Lajoie and Shapiro (1992) “Transpersonal psychology is concerned with the study of humanity’s highest potential, and with the recognition, understanding, and realization of unitive, spiritual and transcendent states of consciousness” (p. 91). Some of the issues considered in transpersonal psychology include spiritual self-development, self beyond the ego, mystical experiences, peak experiences, exceptional human experiences, and other sublime or unusually expanded experiences of living (Anderson & Braud, 2011; Boucovolas, 1999; Daniels, 2005; Firman & Vargiu, 1996; Peters, 1975; Rothberg, 2000; Vaughan, 1993; Walsh & Vaughan, 1993).

Transpersonal psychology has a strong association with complementary and alternative medicine (CAM). This is because many CAM therapies integrate mind, body, and spirit as well as facilitate exceptional human experiences (Daniels, 2005; Tart, 1997).

As discussed in chapter five, the use of CAM therapies, such as fasting, has gained increased acceptance (Barnes, Bloom, & Nahin, 2009; Eisenberg et al., 1993). Between 2002 and 2007, increased use was seen among adults for deep breathing exercises, guided visualization, meditation, naturopathy, and yoga (Barnes et al., 2009; Barnes, Powell-Griner, McFann, & Nahin, 2004). Transpersonal scholars have suggested these methods as a means of personal transformation (Assagioli, 2007; Braud & Anderson, 1998; Daniels, 2005; Frager & Fadiman, 2005; Grof & Grof, 1989; Kornfield, 2001; Vaughan, 2005; Walsh & Vaughan, 1993). When examined under the lenses of exceptional human experiences (EHEs), altered states of consciousness, peak experiences, and self-realization, the scope of transpersonal interest becomes even wider (Braud, 2009; Maslow, 1971; White, 1994). Furthermore, fasting is a highly transformative spiritual experience, making it particularly relevant to the field of transpersonal psychology.

Another concern of transpersonal psychology is the integration of mind, body, and spirit (Daniels, 2005; Tart, 1997). Fasting addresses this relationship in a distinctive manner because it simultaneously alters the participant physiologically, psychologically, and spiritually. The physiological changes that occur during a fast have been associated with psychological transformation. Beginning in the 1970s, several psychiatrists reported success treating psychiatric conditions with fasting, most notably schizophrenia (Boehme, 1977; Cott, 1971; Cott, 1974). In addition, scientists discovered some of the biological mechanisms that may explain how fasting relieves the symptoms of psychopathology, such as depression. For example, fasting has been shown to attenuate hypertension and diabetes (Goldhamer et al., 2002) and improve arterial and heart health (Horne et al., 2008,), all of which are strongly associated with the incidence of depression (Chellappa & Ramaraj, 2009; Jonas, Franks, & Ingram, 1997; Toker, Shirom, & Melamed, 2008).

Although transpersonal theorists have recommended research into the effects of fasting (Sperry, Hoffman, Cox, & Cox, 2007), research efforts currently have primarily focused on the measurement of biological markers (Goldhamer, 2002; Horne et al., 2008). Chapter eight discusses my research on the effects of water-only fasting on the symptoms of depression.

Fasting, Self-Actualization, and Self-Realization

Self-realization is a concept used in psychology, spirituality, and Eastern religions, most notably Buddhism, Hinduism, Jainism, and Taoism. In religious and spiritual traditions, self-realization is often referred to as *enlightenment* (Sisney, 2006). In this respect, self-realization is a state in which an individual attains independence from all worldly bondage. The basic premise of self-realization is that every person has an authentic self which can be discovered though psychological methods and/or spiritual practices.

The idea of self-realization is associated with the concept of self-actualization, first developed by Abraham Maslow (1954). Maslow (1971) considered self-actualization a state in which the individual realizes their full potential. Self-actualization is thought of as preceding self-realization, with the former pertaining to personality and worldliness, while the latter has to do with consciousness expansion and self-transcendence. In the 1950s, Maslow (1954) developed the following hierarchy of needs model to explain the process of self-actualization:

1. Biological and physiological needs, such as air, food, drink, shelter, warmth, sex, sleep, *etc.*
2. Safety needs, such as protection, security, order, law, limits, stability, *etc.*
3. Belongingness and love needs, such as work group, family, affection, relationships, *etc.*
4. Esteem needs, such as self-esteem, achievement, mastery, independence, status, dominance, prestige, *etc.*
5. Self-actualization needs, such as realizing personal potential, self-fulfillment, seeking personal growth, and peak experiences.

According to Maslow (1962), an individual must satisfy lower level basic needs before progressing on to meeting higher level needs. Once these needs have been reasonably satisfied, the person is then capable of reaching the highest level called “self-actualization.” Although every person has the inherent ability to move up the hierarchy, progress is often disrupted by failure to meet lower level needs.

The concepts of self-actualization and self-realization are especially pertinent to the practice of fasting. In relation to self-actualization, fasting has the potential to loosen worldly ties by challenging an individual's attachment to his/her personal needs, such as food and safety. Once a person is self-actualized and prepared for self-realization, fasting is an application that can effectively facilitate the self-transcendence needed to complete the process.

John Firman and James G. Vargiu (1996) remarked that fasting was a method of helping an individual to move toward self-realization and "reach for superconscious energies and to facilitate their flow of expression" (p. 135). In this respect, fasting can trigger not only self-realization, but may also activate exceptional human performances, paranormal abilities, and altered states of consciousness (Berenbaum, Kerns, & Raghavan, 2000; Vaughan, 2005).

In studying the relationship between self-transcendence and mystical experiences, Michael Daniels (2005) implied that spiritual disciplines such as fasting act as a short cut to self-realization:

> Maslow's interest in peak experiences derives from his belief that they constitute a means whereby real self may be contacted directly. Similar beliefs are common to most religious systems and, in many religions, psychophysical and psychospiritual exercises have been developed in the attempt to facilitate ecstatic or other kinds of 'mystical' experiences (e.g., fasting, dance, meditation, or devotional prayer). (p. 150)

Similarly, Robert Assagioli (2007) talked about facilitating self-realization and spiritual awakening through the experience of mystical states. These types of transformative and transpersonal experiences are frequently sought after by people who use fasting as a spiritual practice.

Fasting as a Peak Experience

A peak experience is a state in which an individual experiences certain phenomenon, such as ecstasy, euphoria, and feelings of interconnectedness. Maslow (1971) described peak experiences as moments of intense happiness that lead to profound personal growth. In a public lecture in 1962, Maslow (1971) described the key features of peak experiences:

> These moments were of pure, positive happiness, when all doubts, all fears, all inhibitions, all tensions, all weaknesses, were left behind. Now self consciousness was lost. All separateness and distance from the world disappeared as they felt *one* with the world, fused with it, really belonging to it, instead of being outside, looking in. (p. 9)

In transpersonal psychology, peak experiences are considered essential for initiating the transformative change needed to achieve self-realization. Additionally, the concept of peak experiences were significant in the development of transpersonal psychology. According to Roger Walsh and Frances Vaughan (1993), transpersonal psychology developed in part to explore the characteristics of such experiences:

> One discovery in particular was to have an enormous impact and eventually give birth to transpersonal psychology. Exceptionally psychologically healthy people tend to have “peak experiences”: brief but extremely intense, blissful, meaningful, and beneficial experiences of expanded identity and union with the universe. Similar experiences have been recognized across history and have been called mystical, spiritual, and unitive experience, or in the East, samadhi and satori. (p. 3)

Just as with other time-honored spiritual practices, such as prayer and meditation, fasting is associated with peak experiences. In her work, Frances Vaughan (2005) pointed to fasting as a means of accessing peak experiences:

> Frequently reported triggers of peak experiences include meditation, psychedelics, listening to music, prayer, observing nature and quiet reflection. Other doorways to such experiences include childbirth, being present at the death of a loved one, near death experiences, fasting, vision quests, ceremonies and rituals, holotropic breathing, extreme physical exertion and space travel. (p. 189)

As a spiritual practice, fasting provides the opportunity for releasing earthly ties, joining with the sacred, and creating feelings of deep connectedness. In a lecture titled *Exceptional Human Experiences (EHEs): Their Relevance to Transpersonal Psychology,* William Braud

(2009) said, “The experiences serve as reminders of Something More, of our interconnectedness with others and with all nature, and sometimes they serve as confirmations or affirmations of decisions made and paths taken” (p. 2).

Fasting as an Exceptional Human Experience

One of the primary objectives of transpersonal psychology is to examine the characteristics of the types of exceptional human experiences (EHEs) associated with fasting. Rosemarie Anderson (1998) explained the scope of this inquiry as follows, “Whenever possible, transpersonal psychology seeks to delve deeply into the most profound aspects of human experience, such as mystical and unitive experiences, personal transformation, meditative awareness, experiences of wonder and ecstasy, and alternative and expansive states of consciousness” (p. xxi).

As a spiritual custom, fasting has been connected to these types of experiences, many of which have been classified under the umbrella of EHEs. Fasting is often performed in spiritual practice as a means to gain access to other rituals or experiences, many of which involve multiple EHEs. In 1994, Rhea White created a system of classifying EHEs, the majority of which have been found to occur during periods of fasting.

Within White’s classifications are five specific categories of EHEs: mystical, psychic, encounter-type, death-related, and exceptional normal (White, 1994). Under the first category, *mystical experiences,* the majority of EHEs listed have been associated with fasting, including conversion (Bell, 1985; Bynum, 1987; McKnight, 2009), peak experiences (Firman & Vargiu, 1996; Houston & Rubin, 1995; Rothberg, 2000; Tooker, 1988), numinous dreams (Bell, 1985; Rothberg, 2000), revelations (Bell, 1985; Bynum, 1987), species consciousness (Bynum, 1987), stigmata (Bell, 1985; Bynum, 1987; Vandereycken & van Deth, 1994), transcendental odors (Bell, 1985; Bynum, 1987), transformational experiences (Bell, 1985; Bynum, 1987; Flinders, 1993; Foster & Little, 1980; Tooker, 1988; Wulff, 2000), and wilderness experiences (Foster & Little, 1980; Tooker, 1988).

Under the category of *psychic experiences* the most common experiences related to fasting are intuition (Lyon, 1977), out-of-body experience (Bynum, 1987), precognition (Lyon, 1977), sense of presence

(Bynum, 1987; Foster & Little, 1980; Tooker, 1988), shared EHEs (Fageant & Mercier, 1997; Murray, Huber, & Mechem, 2008), synchronicity (Satori, 1999), unorthodox healing (Bell, 1985; Bynum, 1987), and xenoglossy (speaking in tongues) (Bynum, 1987; Chavda, 2007).

The next category, *encounter-type experiences,* accounts for many of the experiences of the fasting Catholic saints and Native Americans. These EHEs include apparitions and encounters with angels (Bell, 1985; Bynum, 1987; McKnight, 2009), divine figures (Bell, 1985; Bynum, 1987; Foster & Little, 1980; Tooker, 1988), and other species (Foster & Little, 1980; Tooker, 1988).

All of the occurrences under White's category of *death-related experiences* can potentially be attributed to fasting experiences due to the fact that in some religions (most notably Jainism) adherents intentionally fast to death. These types of death-related experiences include events such as life review, past-life recall, near-death, and deathbed experiences (Fowler, 2002; Jaini, 1979; Laidlaw, 2005; Parrinder, 1973; Prajna, 2005; Rader, 2005; Thorner, Raj, Krishnaraj, & Trust, 2000).

The last of White's categories of EHEs are termed *exceptional normal experiences,* many of which can be readily experienced while fasting. These EHEs include aesthetic experiences (Brumberg, 1988), *aha* experiences (Foster & Little, 1980; Tooker, 1988; Walsh, 1998), dreams (Bynum, 1987; Tooker, 1988), empathy (McKnight, 2009), exceptional human performances (Bynum, 1987), experience of the new (Tooker, 1988; Walsh, 1998), hypnagogic/hypnopompic experiences (Bell, 1985; Bynum, 1987), inner movement (Walsh, 1998), inspiration (Bynum, 1987; Tooker, 1988), and performing/witnessing noble acts (Bell, 1985; Bynum, 1987).

Many of the EHEs described by White have been reported in association with fasting. The following represent some of these examples. Individuals often experience a number of EHEs simultaneously during an ongoing experience. When Stephen Larsen (2001) discussed the healing power of fasting dreams, he indicated how it was reported that the ancient Greeks would fast for three days before being healed in a dream by an apparition of God. This set of EHEs represents—at a minimum—numinous dreams and divine encounters.

Visions and communication with divinity have long been a goal of fasting participants (Bynum, 1987; Flinders, 1993; Flinders, 1999; Tooker, 1988; Vandereycken & van Deth, 1994).

Donald Rothberg (2000) discussed the occurrence of visions, revelations, and divine encounters while fasting, explaining how ascetic practices bring about these experiences:

> A number of different practices may induce the desired vision or dream… Other means used include fasting and other ascetic practices, community rituals, and the use of psychedelics. Typically, these practices make possible a dream or vision in which there are revelations from spirits, either from one's own guardian spirit or from other spirits. (p. 173)

Throughout history, visionaries have fasted to obtain mystical revelations. Huston Smith observed that visionary experiences have historically been brought on by fasting, mentioning both the Buddha's and Christ's experiences (Smith & Cousineau, 2005). Roger Walsh (1998) noted how fasting assisted shamans in the elicitation of visions and that they were the anticipated result of such practices:

> So practices such as solitude and fasting enhance access to the inner world and its images, visions, dreams, and spirits. The range of these inner experiences is vast, but commonalities emerge across cultures. For the successful candidate these practices climax in certain experiences which indicate that a degree of shamanic mastery has been attained. (p. 67)

Exceptional human experiences were of interest to psychologist and philosopher William James (2007/1902). His investigation into consciousness, psychic phenomena, healing, and spiritual experiences has been an ongoing study in the field of transpersonal psychology. Robert Frager and James Fadiman (2005) noted that James was one of the first authors to publish a "fully developed theory of consciousness," preceding those of Joseph Breuer and Sigmund Freud (p. 201). Frager and Fadiman discussed the relationship between EHEs and activities such as fasting: "Altered states of consciousness can be triggered by hypnosis, meditation, psychedelic drugs, deep prayer, sensory deprivation, and the onset of acute psychosis. Sleep deprivation or fasting can induce them" (p. 201).

In discussing the nature of White's five categories of EHEs, Genie Palmer and William Braud (2002) noted, "Correlational results indicated that frequent and/or profound EHEs were positively and significantly related to high levels of meaning and purpose in life, high levels of spirituality, “thin” or permeable boundaries, and a tendency toward transformative life changes” (p. 29). This may explain the evocation of EHEs among those who have fasted. As Stephen Harrod Buhner (2012) said, “As deep fasts progress, as the veil between us and the spiritual world thins, the heart begins to perceive the hidden face of the sacred within everyday things” (p. 7).

White later expanded the five categories of EHEs, eventually developing a matrix that she used to catalog them (Brown, 2000; White & Brown, 1997). In 2002, White and Brown further elucidated the nature of anomalous and exceptional human experiences. Some of the qualities that were associated with fasting included *desolation/nadir experience* —the opposite of ecstatic or peak experiences (Fessler, 2003; Rogers, 1976), *dissociative experience* (Fessler, 2002; Vandereycken & van Deth, 1994), and *EHE chain,* a sense of connection to an experience through the experience of others (Laidlaw, 2005; Peters, 1975).

Fasting and Flow

An emerging area of interest in transpersonal psychology is the concept of flow. In his book *Flow: The Psychology of Optimal Experience,* Mihaly Csikszentmihalyi (2008) described flow as “The state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it” (p. 4).

Flow has its roots in spiritual and religious traditions, such as Taoism, Buddhism, Hinduism, and shamanism, all of which believe that there is a natural order or flow inherent in all things (Ferguson, 2010). For example, in Taoism, flow is related to the movement of water in nature, and such references have also been noted in Buddhism, Christianity, Islam, and Judaism (Trembley, 2010). Furthermore, mysticism and mystical states of consciousness have been associated with the concept of flow (Csikszentmihalyi, 1998; Trembley, 2010).

Research has suggested that individuals who routinely fast as a spiritual practice believe that it has the potential to enhance the phenomenon of flow (Fredricks, 2011). Additionally, scholars have associated fasting with the facilitation of flow (Nash, 2006). In her article

Mutant Spiritualities in a Secular Age: The Fasting Body and the Hunger for Pure Immanence, Jo Nash (2006) said, “Fasting to attain a conscious connective flow within the plane of immanence… enables practitioners to attain an existential state of consciousness…” (p. 324).

In psychology, the theory of flow was expressed in the theories of Abraham Maslow and Carl Rogers, and utilized in their development of humanistic psychology (Nakamura & Csikszentmihalyi, 2002). Additionally, Maslow’s description of peak experiences is considered to be in alignment with the phenomenon of flow (Maslow, 1964; Trembley, 2010).

Positive psychologists have actively researched flow in an effort to better understand the constructs of happiness (Nakamura & Csikszentmihalyi, 2009). Jeanne Nakamura and Csikszentmihalyi (2009) suggested that the following six factors must occur in combination for a true flow experience to take place:

1. Intense and focused concentration on the present moment
2. Merging of action and awareness

3. A loss of reflective self-consciousness

4. A sense of personal control over the situation or activity
5. A distortion of the subjective experience of time

6. Experience of the activity as intrinsically rewarding

Although flow and other mystical states of consciousness can be a feature of fasting, it is important to acknowledge that fasting will not elicit this phenomenon for every participant. In fact, some individuals who engage in a lifelong practice of fasting may never have a mystical experience.

Fasting and Altered States of Consciousness

An altered state of consciousness (ASC) is any condition which is significantly different from a normal waking beta wave state (Bundzen, Korotkov, & Unestahl, 2002). The phenomenology of ASCs was first described by Arnold M. Ludwig (1966) and brought into common usage by Charles T. Tart (1969). Ludwig (1966) noted a number of anomalistic reactions during ASCs, including changes in sense of time, emotional expression, perception of body image, meaning and significance, and other perceptual distortions. Other feelings included loss of control and a sense of rejuvenation. Tart offered the following definition of an ASC:

> An altered state of consciousness for a given individual is one in which he clearly feels a *qualitative* shift in his pattern of mental functioning, that is he feels not just a quantitative shift, but also that some quality or qualities of his mental processes are *different.* (p. 2)

Altered and higher states of consciousness became an area of interest in transpersonal psychology largely due to Tart's work. Another major contributor was Roger Walsh (1979, 1980, 1983). In the book *Paths Beyond Ego: The Transpersonal Vision,* Roger Walsh and Frances Vaughan (1993) explained how fasting and other ascetic acts were techniques with which to induce transpersonal phenomenon and ASCs:

> Transpersonal experiences occur in altered states of consciousness, and the study of both has made clear just how dramatically we have underestimated the plasticity of human consciousness and its range of potential states… The range of techniques for inducing these states is vast and includes both ancient and modern methods. Some time-honored methods are physiological strategies such as fasting, sleep deprivation, and exposure to heat and cold; others are psychological methods such as solitude, chanting, drumming, dance, meditation, and yoga. (p. 9)

Fasting has been associated with ASCs for thousands of years (Winkelman, 2004). The first record of fasting in connection with ASCs was from the pre-Columbian Mayan civilization which began two thousand years before Christ (Shepard, 2004). Ancient hieroglyphic writings and artwork from this period describe trance states induced by fasting and other ascetic activities (Shepard, 2004). Shamanic asceticism, discussed more extensively in chapters 9 and 10, has been associated with ASCs since the same time period. Vaughan (2005) explained the transpersonal perspective on how fasting and asceticism alters consciousness:

> When the ego that is subject to physical laws dissolves into an identification with soul, it enters the timeless imaginal realms that are perceived as other worlds or alternative realities. These may be accessed by a variety of consciousness-altering techniques such as meditation, shamanic journeys, holotropic breathing, fasting, solitude and contemplation. (p. 106)

In religious and spiritual traditions, fasting has been a common means of producing ASCs. Kabir Helminski (1992), an author on spiritual psychology and Sufism, said, “Through control of the breath, fasting, and sustained awareness it becomes possible to separate from our coarser bodies and to mount the steed of pure consciousness” (p. 118). In this manner, fasting empties the body and clears the mind, sharpening intuition and other transpersonal ways of knowing. Speaking to this point, William Blake (1996/1893) said, “If the doors of perception were cleansed everything would appear to man as it is, infinite” (p. 154). Transpersonal theoreticians claim that a psychic cleansing occurs while fasting (Grof & Grof, 1989; Sperry, 2001). In this way, fasting becomes an effective method for integrating the lower, middle, and higher unconscious realms through somatic experience, a primary concern of transpersonal psychology.

Research on ASCs has been conducted primarily by psychologists and anthropologists. Investigations have focused mainly on the various states of consciousness that are associated with ASCs and the techniques for producing them. Two areas of interest in research have been trance states and liminality, both of which are associated with fasting.

Fasting has a therapeutic effect on a type of consciousness known as *liminality.* Liminality is the sense of in between that is found within altered states. The term is used to describe a range of experiences from being in between two spiritual worlds to being in between two stages of life. Anthropologist Victor Turner (1987) defined the concept of liminality in reference to rites of passage and said, “Such rites indicate and constitute transitions between states” (p. 4).

During liminality, the participant lacks social status and suspends their current state of being (Peters, 1975). When fasting, the participant experiences consciousness in a transitional state that correlates with a suspension of everyday activities and social conventions. Anthropologist and psychologist Larry G. Peters (1975) explained this phenomenon, "Altered states of consciousness are often induced here, for example though fasting, psychedelic ingestion, continual dancing, or sensory deprivation" (p. 209). During liminality, fasting has the potential to facilitate change by causing a paradigm shift in beliefs and values.

Another area of ASC research involves the examination of trance states, often in relation to shamanism. Shamans deliberately partake in ascetic activities, such as fasting, isolation, and sleep deprivation, with the intent of producing ASCs for the purposes of divination and/or healing (Harner, 1980; Krippner, 2000; Peters, 1989; Walsh, 1990; Winkelman, 2002). Anthropologist Michael Winkelman has done extensive research on shamanism, traditional healing practices, and ASCs. In the article *Neuropsychology of Shamanism,* Winkelman (2004) said,

> The ecstasy or altered state of consciousness, recognized as a universal of shamanism is central to the selection, training, and professional practice of shamans. Shamanic altered states of consciousness are induced by a variety of procedures (e.g., drumming, clapping, singing, and chanting; fasting and water restrictions; prolonged periods of sleeplessness, or deliberate periods of sleep for dream incubation; austerities such as temperature extremes and painful exposures or mutilations of the body; and hallucinogens and other plant medicines). (p. 188)

Winkelman (1986) has referred to fasting as one of a number of "trance induction procedures" (p. 186). Other methods include alcohol, psychotropics, social isolation, sleep deprivation, and auditory driving (e.g., drumming and singing). In one study, Winkelman (1986) sought to understand how possession trance differed from non-possession trance. Through an examination of anthropological and psychophysiological literature, Winkelman performed a correlational analysis using multidimensional scaling and division of data into discrete types (cluster analysis) to distinguish between the two types of trance states. His results indicated that possession trance was associated with fasting, nutritional deficits, and temporal lobe discharges. Winkelman pointed out that fasting was a means of manifesting high-voltage slow-wave EEG activity that originates in the hippocampal-septal area of the brain and causes a synchronous slow-wave pattern in the frontal lobes. The hippocampal-septal region is the part of the brain that is involved with basic drives, such as hunger and thirst. Additionally, he found that it was the right quadrant of the brain that was associated with variables that assess fasting. According to Winkelman,

> Food and water deprivation have a direct effect upon the pituitary and adrenal glands, which directly affect the hypothalamus and the hippocampal-septal systems… it seems clear that both fasting and dietary deficiencies can contribute to changes in the central nervous system which facilitate the induction of trance states. (p. 179)

In his final analysis, Winkelman determined that fasting and other ascetic techniques resulted in a predisposition to trance states and behavioral changes due to effects on the central nervous system.

The effects of fasting on ASC and the brain have also been examined in the context of anorexia nervosa. In his article *Codons of Consciousness: Neurological Characteristics of Ordinary and Pathological States of Consciousness,* Gerard A. Kennedy (2011) made the following observation, "In subjects undergoing extreme fasting and in patients with anorexia, altered states of consciousness and are evident in terms of attentional biases for food-related stimuli, disturbed body image, illusions and/or hallucinations" (p. 73).

It is worth noting that the ASCs that are produced by fasting can have deleterious effects in some people. In other words, the induction of an ASC does not always result in a pleasurable experience. Additionally, some people have commented that first-time fasters in retreat settings can have a negative reaction to ASCs that can interfere with the serenity of other attendees (Ingram, 2008).

Although there are risks in cultivating ASCs, there are also benefits. In her article *Healing and Wholeness: Transpersonal Psychotherapy,* Frances Vaughan (1993) explained that techniques such as fasting have produced ASCs that can have "powerful therapeutic effects" (p. 164). Brant Cortright (1997) concurred and called fasting "an effective non-drug technique useful for inducing an altered state of multidimensional consciousness" (p. 16).

Conclusion

Fasting provides a variety of transpersonal experiences, including supernatural, anomalous, and paranormal events (Berenbaum et al., 2000; Krippner & Achterberg, 2000). As a mystical experience, fasting has been used as a means of spiritual training, resulting in the occurrences of exceptional phenomena, inner voices, and abnormal bodily changes (Foster & Little, 1980; Wulff, 2000).

When fasting is integrated into a personal belief system, it has been shown to have substantial health benefits, and there are reports of healing across a variety of cultures (Cott, 1974; Horne et al., 2008; Kanazawa, Hongo, & Fukudo, 2006; Krippner & Achterberg, 2000). For example, fasting has been used to treat schizophrenia in Russia (Cott, 1974) and mood disorders in Japan (Suzuki, Yamauchi, Yamamoto, & Komuro, 1979).

Although transpersonal theorists have recommended research into the effects of fasting when used to improve well-being, research efforts so far have been extremely limited (Sperry, Hoffman, Cox, & Cox, 2007). In light of the longstanding interest in fasting as a transformative experience, research that explores the transpersonal aspects of the fasting phenomenon would be relevant now more than ever before.

8

Fasting and Depression

Through control of the breath, fasting, and sustained awareness
it becomes possible to separate from our coarser bodies
and to mount the steed of pure consciousness.

—KABIR HELMINSKI (1992, p. 118)

After observing a correlation between water-only fasting and a reduction in the symptoms of depression in individual case studies, I decided to conduct a study to see if my observations were correct. In order to measure the symptoms of depression, the Beck Depression Inventory (BDI-II) was administered twice over a 14-day period. The Multidimensional Health Locus of Control (MHLC) scales were given at the same time in order to access participants' beliefs about power over one's own health.

Intervention participants were asked to attempt a water-only fast of at least 5 days. Both intervention and control subjects came from the general population. Upon completion of the research, the data suggested that the participants who were depressed had a significant reduction in symptomatology after water-only fasting for an average of 6 days.

In order to structure the research from the most appropriate psychological framework, an association between the phenomenon of fasting and transpersonal psychology was drawn. This supposition was based on the fact that transpersonal psychology is concerned with the self-transcendent and spiritual aspects of human experience, making it closely aligned with the transformative nature of fasting. What follows are the justification, design, results, and discussion of the study.

Significance of the Study

Depression is a worldwide epidemic that affects more than 340 million people globally (Demissie, Siega-Riz, Evenson, Herring, Dole, & Gaynes, 2011). In the United States, conservative estimates place the cost of depression at $100 billion in medical costs and lost productivity annually (Dave, Tennant, & Colman, 2011).

Scientists estimate that about 10% of men and up to 25% of women will experience depression in their lifetime (NIMH, 2012). By 2020, depressive disorders are expected to be the second most common illness in the world (Loftis, 2011). By 2030, depression is projected to be the second leading cause of disability worldwide and the leading cause of disability in high-income nations, including the United States (Gonzalez, Vega, Williams, Tarraf, West, & Neighbors, 2010).

These are sobering findings, in light of the fact that depression currently poses a substantial risk of death and is associated with a high rate of disability (Gotlib & Hammen, 2009). A large-scale review of 30 studies found that about 15% of patients with major depression will eventually die by suicide (Goodwin & Jamison, 1990).

Although suicide rates have declined since the introduction of selective serotonin reuptake inhibitors (SSRIs) in 1988, approximately 30% of patients with major depression do not respond to SSRIs (Gibbons, Hur, Bhaumik, & Mann, 2005; Rosack, 2005). Many end up taking a combination of two or more antidepressant medications, with minimal results. Despite the availability of a wide range of antidepressant drugs, nearly 50% of all depressed patients fail to respond to antidepressant medication of any kind (Loftis, 2011).

Among antidepressant medications, SSRIs have been found to be particularly effective, making them the medication of choice in most cases (Cipriani et al., 2010). However, researchers have questioned the true drug effects of this class of antidepressants, as well as those of others. In the past decade, three reviews examined a total of 105 studies on antidepressants and concluded that the drugs were no more effective than a placebo, except in the severest form of depression (Fournier et al., 2010; Khan, Leventhal, Khan, & Brown, 2002; Kirsch, 2008; Kirsch, Deacon, Huedo-Medina, Scoboria, Moore, & Johnson, 2008). This research suggests that, whereas antidepressants can be effective, other alternatives may offer similar benefits, without the side effects.

Concerns have been raised over the side effects associated with antidepressants, which include suicide, worsening of depression, and unusual changes in behavior in children, adolescents, and adults. In the fall of 2004, the U.S. Food and Drug Administration instructed drug manufacturers to add black box warnings to antidepressant medications because of serious side effects, including feelings of suicidality in adolescents (Cheung, Sacks, Dewa, Pong, & Levitt, 2008). A black-box warning, the most severe warning that can be placed on a drug label, is used to alert doctors and patients of potential problems. Based on this evidence, complementary and alternative medicine (CAM) therapies, such as fasting, represent a viable option for patients who are not helped by antidepressants or who want to avoid the side effects.

Antidepressant Side-Effects

Side effects are common in all antidepressants. For many people, the side effects are serious enough to make them stop taking the medication. The most widely prescribed antidepressants, the SSRIs, have side effects that include:

- Anxiety
- Constipation
- Decreased sex drive
- Diarrhea
- Dizziness
- Dry mouth
- Fatigue
- Headaches
- Insomnia
- Nausea
- Restlessness
- Sleepiness
- Sweating
- Tremors
- Weight gain or loss (Hu et al., 2004)

Whereas some side effects go away after the first few weeks of drug treatment, others persist and may even get worse. As discussed earlier, antidepressants may increase suicidal thoughts in some people (Busch et al., 2010). These thoughts are most prevalent in children and adolescents, but are seen in adults as well, particularly in the early stages of drug treatment when severe depression first lifts. In adults over the age of 65,

SSRIs pose an additional concern. Studies show that SSRI medications may increase the risk for falls, fractures, and bone loss in older adults (Diem et al., 2007; Haney et al., 2007). Antidepressants can also cause serious withdrawal symptoms if you stop taking them abruptly (Glenmullen, 2001; Hu et al., 2004).

Based on these facts, CAM therapies, like fasting, represent an alternative to conventional drug therapy in the treatment of depression. In the U.S., there has been increased use of CAM therapies, indicating a potential demand for such therapies (Barnes, Bloom, & Nahin, 2009). Because fasting has a positive effect on mental health, improves overall health and brain function, it represents a viable alternative for patients suffering from depression, particularly for those who are not helped by antidepressant medications or find the side-effects too great.

Water-Only Fasting as a Treatment for Depression

In 2010, I conducted a mixed methods study (quantitative and qualitative) that explored the use of fasting as a means of reducing the symptoms of depression (Fredricks, 2011). The study was designed to assess depression and locus of control at two intervals as measured by the Beck Depression Inventory (BDI-II) and Form B of the MultiDimensional Health Locus of Control (MHLC) scale.

The following is a summary of the study and discussion of the statistical findings. Implications for practice and limitations to the study are also included. Recommendations for future research will be discussed later. In this chapter, the design of the study is considered, along with a discussion of quantitative data gathering and analysis. Next, the qualitative data is examined.

Study Design

This study was conducted using a mixed-methods design, including both quantitative and qualitative data, with a comparison group matched with the intervention group as based on two variables: (a) gender and (b) categories of *minimal, mild, moderate,* and *severe* depression as outlined in the scoring of the BDI-II. A pretest-posttest design was used to check whether the groups were different before the intervention was begun and the effect of the intervention. The comparison group did not undergo water-only fasting, the experimental treatment in this study. In addition, a Thematic Content Analysis (TCA) was performed on the participants' responses to the open-ended questions (Questions 6-11) on a Posttest Fasting Questionnaire.

Study Objective

The overall objective of this research was to access the use of water-only fasting on the symptoms of depression. This objective comes from reports and research in medicine and psychology that have indicated that fasting has the potential to improve health and feelings of well-being. In order to reach the objectives, two hypotheses were tested:

H1. Water-only fasting, complete abstinence from all food and drink except water, reduces the symptoms of depression.

H2. Water-only fasting, complete abstinence from all food and drink except water, increases internal locus of control.

Research Method and Design

An online testing format was created for the study. Participants were recruited on the Internet using a variety of websites and posting services. Details pertaining to the participants and their recruitment are expanded upon in the following sections. Because two groups were used in this study two separate consent forms were created and posted online (a consent form for the fasting group and a consent form for the control group).

All participants who consented to participate were redirected to the testing webpages upon submission of their consent form. This format was used due to feasibility issues, such as the large number of participants needed in order to complete the initial matching at testing time one and complete testing time two.

The rationale for selecting and handling participants in this manner was to have as clean a sampling and research design as possible. The traditional, repeated measures design of this research is commonly used with the BDI-II. By using an intervention and a control group, the researcher was able to gather data for pre-and post-measurement analysis to determine if the intervention (fasting) had an effect.

Study Participants

An a priori power analysis using GPower 3.0 software for a repeated measures design with an alpha level of .05 and a moderate effect size revealed a minimum sample size of 68 participants (34 per group) was needed to maintain a power level of .80 (Faul, Erdfelder, Lang, & Buchner, 2007). In order to account for a potential 25% attrition, the total sample was estimated to be 84, with 42 participants per group. However, the control group was estimated to need more participants (68) in order to have an adequate amount of participants for matching to the treatment/intervention group participants.

Participants were required to be 18 years old or older. The participants in both groups were 19 to 68 years old. Ethnicity was not considered as a factor for participation in the study. Because gender was a variable for group matching, an even number of men and women were sought. At the end of recruiting and matching, study participants included 72 women and 12 men.

Participant Recruitment

The intervention group was recruited in a variety of ways, including (a) letters of introduction to fasting clinics, retreats, coaches, and online fasting groups; (b) paid ads on Facebook and Google; (c) a call for participants posted on a popular international posting website known as Craig’s List; and (d) flyers posted locally. Intervention participants received a questionnaire after the second test asking how they had heard about the study. Of the 34 intervention participants who responded to the question, 6 said they had heard about the study on the website, Fastingconnection.com, 5 had heard about it from Craigslist.org, and 2 had heard about it from Curezone.com. The remaining intervention participants either did not answer the question or were unsure as to how they had learned about the study.

The comparison group was recruited in two ways: (a) posts on Craig’s List and (b) flyers posted locally. Because comparison participants were not asked where they had heard about the study, it was not known which sources directed them to the research website.

Instruments Used

Two instruments were used in this study in a pretest and posttest procedure. Participants first filled in the BDI-II followed by the MHLC. BDI-II. The rationale for selecting the BDI-II was its reliability and suitability. The BDI-II is the most widely used instrument for detecting depression and takes 5 to 10 minutes to complete (Beck, Steer, & Brown, 2009). In use for over 35 years, the BDI-II has become the most accepted psychological test for assessing the severity of depression in normal and clinical populations (Archer, Maruish, Imhof, & Piotrowski, 1991; Nezu et al., 2009; Piotrowski & Keller, 1992; Piotrowski, Sherry, & Keller, 1985). The rationale for selecting Form B of the MHLC scales is its reliability and suitability for studying depression and fasting. The MHLC is the one of the most widely used instruments for evaluating locus of control and takes about 5 to 10 minutes to complete (Wallston, Wallston, & DeVellis, 1978).

The Beck Depression Inventory (BDI-II)

The BDI-II is a 21-question multiple-choice self-report designed to assess the intensity of depression in both clinical and normal patients. Each question contains a list of four statements about a particular symptom of depression. The list is arranged in arranged in increasing severity of depression.

When taking the BDI-II, the individual is asked to consider each statement as it relates to the way they have felt for the past two weeks, to accurately correspond to the DSM-IV (American Psychiatric Association, 2000) criteria. Examples of questions from the BDI-II are “I have lost most of my interest in other people or things,” to measure feelings about the world, “I feel discouraged about the future” to measure feelings about the future, and “I criticize myself for all my faults” to measure feelings about the self.

The research theory that informed the design choice was the cognitive theory of depression Beck (as cited in Abela & D’Allesandro, 2002), which suggests that the cognitive symptoms of depression precede the affective and mood symptoms of depression in both an affective and somatic manner (Abela & D’Allesandro, 2002).

Beck' s theory supported the hypothesis that fasting would affect the symptoms of depression by suggesting that an action, such as a water-only fast, would alter the symptoms of depression by affecting the individual neurophysiologically and psychologically. Another theory developed by Beck (as cited in Whitfield & Davidson, 2007) guided this research: the negative cognitive triad, which asserts that negative thoughts about self affect the person's view of the world and their future (Whitfield & Davidson, 2007).

In regards to my study, Beck's theory suggested that fasting has the potential to alter a person's view of self in relation to reality. Literature provides ample evidence that fasting alters a person's view in this manner (Buhner, 2012; Cortright, 1997; Grof, 1998; Peters, 1975; Vaughan, 1993).

MultiDimensional Health Locus of Control (MHLC)

The other instrument used was the Multidimensional Health Locus of Control (MHLC). Locus of control is a psychological construct concerning an individual's belief system regarding the possible determining sources responsible for the events or outcomes in their life (Levenson, 1973; Rotter, 1954; Rotter, 1966). Those who believe that events or outcomes are random or beyond their control are characterized as having external locus of control. By comparison, those who believe they have control over events or outcomes have internal locus of control.

In use for over 20 years, the MHLC has been well-researched for health and psychology (Furnham & Steele, 1993; Masters & Wallston, 2005; Rozensky, Sweet, & Tovian, 2004; Wallston et al., 1978). Research has shown that the MHLC is well-suited for participants who have acute or chronic health problems and it has been used successfully with the BDI-II in a variety of settings (Brandon & Loftin, 1991; Frazier, Davis-Ali, & Dahl, 1994; Leung & Bryant, 2000; Meyers, 2002; Skibinski, 2007; Wallston & Wallston, 1981; Walston, 2004).

Additionally, the MHLC has been used in research examining the use of complementary and alternative medicine therapies, making it appropriate for a study examining the effects of therapeutic fasting (Montbriand, 1998; Sasagawa, Martzen, Kelleher, & Wenner, 2008; Sirois, 2008; Tokuda et al., 2007; Verhoef, Rose, White, & Balneaves, 2008; Wai-Hung So, 1997).

The MHLC is a self-report measure with 18 statements that participants rate on a six point Likert-type scale in which: 1 = strongly disagree, 2 = moderately disagree, 3 = slightly disagree, 4 = slightly agree, 5 = moderately agree, and 6 = strongly agree.

The MHLC contains three subscales: (a) Internal Health Locus of Control (IHLC), the belief in the personal ability to directly impact health outcomes, (b) Chance Locus on Control (CHLC), the belief that outcomes are the results of fate and chance, and (c) Powerful Others Health Locus of Control (PHLC), the belief that health professionals or other people influence personal health.

An example of an IHLC statement is “If I become sick, I have the power to make myself well again.” An example of a CHLC statement is “When I become ill, it’s a matter of fate.” An example of a PHLC statement is “The type of care I receive from other people is what is responsible for how well I recover from an illness” (Wallston et al., 1978).

Data Collection

The following is a description of the data collection process including both testing at test time one and test time two.

Test time one. The pretest of the BDI-II and the MHLC was given to participants during the first phase of data collection. Both the intervention and control groups completed the BDI-II and the MHLC online. Afterwards, they were reminded that testing would be re-administered again in 2 weeks. Participants were classified as depressed according to their BDI-II scores.

Classification as depressed required a score of 10 or above (Beck, Steer, & Garbin, 1988). Score-matching occurred during this first phase. The researcher matched gender and the four BDI-II scoring categories (minimal, mild, moderate, and severe). Every participant in the treatment group was matched with their counterparts in the control group.

Test time two. Two weeks after the first testing, the posttest of the BDI-II and the MHLC were given to control and intervention participants during the second phase of the sampling and data collection process. The posttest occurred at varying times for each of the two groups according to each participant’s start dates. The treatment group was also offered an optional survey inquiring into the participant’s current and previous fasting experience.

Data Analysis

The BDI-II is scored by summing the ratings of the instrument's 21 items. Each item is rated on a 4-point Likert scale ranging from 0 to 3. The maximum total score possible is a 63.

The MHLC consists of three six-item scales using a Likert format. Respondents rate each item on the MHLC using a six-point (1 to 6) scale; thus, each subscale of six questions has a scoring range from 6 to 36. There is no total MHLC score for the questionnaire as each subscale is treated separately. The MHLC's three subscales allow for the comparison of participant's loci of control scores across three different variables, thus creating the potential for more in depth data analysis. For the purposes of the present study, the MHLC data from all three subscales; IHLC (internal), CHLC (chance), and PHLC (powerful others) were examined.

Research Results The findings for the study were derived from statistical analyses conducted on the data that were collected. A qualitative analysis follows the representation of the quantitative data.

In summary, the findings indicated a statistically significant difference between the groups [F(1,82) = 20.91, p < .001], demonstrating the efficacy of fasting as a potential treatment for decreasing symptoms of depression. Internal Locus of Control (IHLC) pretest scores revealed a significantly higher score for the intervention participants, indicating a stronger belief in the personal ability to directly impact health outcomes. In addition, themes identified from participants' responses were analyzed in a qualitative Thematic Content Analysis. The results of this research are presented below.

Descriptive Statistics A total of 286 participants were enrolled in this study during October 2010. Of the 286, 211 were classified as depressed, according to their scores on the BDI-II, which has a cut off score of 10 or above indicating depression (Beck et al., 1988). Of the 211 participants who scored as depressed at the pretest, 146 took the posttest at test time two. The 42 matched pairs (42 control and 42 intervention participants) were matched from that group. Matching was done by score category (minimal, mild, moderate, and severe), and by gender.

Of the 42 matched pairs, there were 36 pairs of women and 6 pairs of men—85.7% and 14.3% of the total sample, respectively. In terms of level of depression among the 42 matched pairs, 23.9% of the total sample of participants had minimal depression scores, 10.5% had mild scores, 35.71% had moderate scores, and 30.95% had severe scores. Ten pairs had minimal depression scores totaling between 14 and 19. Four pairs had mild depression scores totaling between 10 and 13. Fifteen pairs had moderate depression scores totaling between 20 and

28. Thirteen pairs had severe depression scores totaling between 29 and 63. These descriptive statistics for depression are presented in Table 1.

Table 1

Level of Depression per BDI-II Scores (N = 84)

Level of depression by gender	Intervention			Control		
	n	%	% *N*[a]	*N*	%	% *N*[a]
Minimal						
Female	9	**90.00**	**10.71**	9	**90.00**	**10.71**
Male	1	**10.00**	**1.19**	1	**10.00**	**1.19**
Mild						
Female	4	**100.00**	**4.76**	4	**100.00**	4,76
Male	0	**0.00**	0	0	**0.00**	0
Moderate						
Female	11	**73.33**	**13.10**	11	**73.33**	**13.10**
Male	4	**26.66**	**4.76**	4	**26.66**	**4.76**
Severe						
Female	12	**92.30**	**14.29**	12	**92.30**	**14.29**

Male	1	7.69	1.19	1	7.69	1.19

[a] Percent of total sample.

Of the 75 participants who did not meet the depression cut-off of 10 or above on the BDI-II pretest, 23 were fasting participants and 52 were control participants. In terms of attrition, 22 fasting participants who pretested as depressed did not posttest (10.43% attrition rate), whereas 43 control participants who pretested as depressed did not posttest (20.28% attrition rate). The total observed attrition rate of the sample was 30.8%. This study lasted 31 days from pretesting to posttesting.

The participants in the sample were between the ages of 19 and 68, with a mean age of 34.82 *(SD* = 13.23) for the overall sample. The mean age of women was 34.40 *(SD* = 12.97); and the mean age of men was 37.33 *(SD* = 15.04). Most participants were unmarried. Fifty-four participants (64.3%) had never married, 22 (26.2%) were currently married, and eight (9.5%) were divorced (See Table 2). Participants were not asked where they lived, but because some recruitment was done via internet resources, the sample is considered diverse. On the whole it was a well-educated sample. Fifteen participants had completed high-school (17.9%), 29 had completed some college (34.5%), 27 had a Bachelor's degree (32.1%), 10 had a Master's degree (11.9%), and three had a doctoral degree (3.6%). These demographic statistics are presented in Table 2.

Table 2

Participant Demographics (N = 84)

	Intervention		Control	
Variable	*n*	%	*n*	%
Gender				
Female	36	85.80	36	85.80

		85.80		**85.80**
Male	6	**14.20**	6	**14.20**
Age				
18-29 years	19	**45.20**	21	**50.00**
30-39 years	10	**23.80**	7	**16.70**
40-49 years	7	**16.70**	3	**7.10**
50-59 years	6	**14.30**	6	**14.30**
60-69 years	0	**0.00**	5	**11.90**
Marital status				
Single	30	**71.45**	24	**57.10**
Married	9	**21.45**	13	**31.00**

Divorced	3	**7.10**	5	**11.90**
Education				
High school graduate	7	**16.70**	8	**19.00**
Some college	16	**38.10**	13	**31.10**
BA/BS	12	**28.60**	15	**35.70**
MA/MS	5	**11.90**	5	**11.90**
Doctorate	2	**4.70**	1	**2.30**

Preliminary Analysis A preliminary analysis was conducted to examine if the data met the assumptions using a repeated measures ANOVA in order for the test to be appropriate. Skewness and kurtosis for each group for each variable were calculated to examine whether each variable was normally distributed for each level of the independent variable group. Skewness values fell in normal range for all age categories for all variables. Kurtosis values for all values for all age categories fell in normal range except the intervention group BDI Posttest (2.41) and intervention group IHLC Posttest (2.55). Therefore, the distribution was highly peaked for these variables. Values between-2 and

+2 are considered normally distributed. Square root transformations were made to normalize the variables.

The First Hypothesis The first hypothesis was supported, as levels of depression dropped significantly between measurement times for the intervention group
[F(1,82) = 20.91, *p* < .001].

At testing time one, the fasting group had a mean BDI-II score of 25.38 (SD = 11.01), whereas the control group had a mean of 25.74 (SD = 11.84). A one-way ANOVA was conducted to analyze the small difference in means at testing time one. This difference was not significant, F(1,82) = .020, *p* = .887, which means that the groups were similar in terms of depression level at testing time one. For this reason, if regression to the mean is present in this repeated measures experiment, it should affect both groups in the same manner.

At testing time two, however, the groups were significantly different. The fasting group exhibited less depression (M = 13.67, *SD* = 12.32) than the control group (M = 23.29, *SD* = 11.85) at testing time two (Table 3). A one-way ANOVA was conducted with *group* as the independent variable and *BDI-II posttest scores* as the dependent variable to confirm the difference in means at testing time two were significantly different, F(1,82) = 13.29, *p* < .001.

Table 3

Pretest and Posttest Scores on Dependent Variables

Variable	*Pretest M (SD)*		Posttest *M (SD)*	
	Intervention	Control	Intervention	Control
BDI-II	**25.38**	**25.74**	**13.67**	**23.29**
Total[a]	(11.01)	(11.84)	(12.32)	(11.85)

CHLC (Chance)	18.19 (5.35)	**19.00** (6.19)	17.81 (6.05)	**19.40** (6.18)
IHLC (Internal)[a]	28.26 (4.89)	**25.71** (5.11)	28.60 (5.52)	**24.71** (4.67)
PHLC (Powerful Others)	16.14 (5.55)	**17.00** (6.86)	17.02 (5.71)	**17.38** (6.31)

[a] Square root transformed values were used in analysis. Untransformed values are presented here for ease of interpretation.

There was an overall effect of time on depression scores, F(1,82) = 48.93, *p* < .001, meaning participants scored differently at testing times one and two. There was an overall effect of group, F(1,82) = 4.47, *p* = .038, which indicates that participants scored differently across conditions (intervention vs. control). Furthermore, the interaction of group and time (BDI-II scores at testing time one and testing time two) was significant, F(1,82) = 20.91, *p* < .001. These findings are presented in Table 4.

Table 4

Two-Way Repeated Measures ANOVA: df =1 (N = 84)

Measure and source	*SS*	*MS*	*F*	*p*
BDI-II				
Between Groups	**9.84**	**9.84**	**7.74**	.007*
Within Groups	**36.08**	**36.08**	**55.63**	<.001**
Interaction	**18.30**	**18.30**	**28.21**	<.001**
CHLC (Chance)				
Between Groups	**30.36**	**30.36**	.979	.325
Within Groups	.006	.006	.001	.979
Interaction	**6.48**	**6.48**	.733	.394
IHLC (Internal)				
Between Groups	**6.62**	**6.62**	**12.04**	.001**
Within Groups	.064	.064	.172	.679
Interaction	.771	.771	**2.07**	.154

PHLC (Powerful Others)				
Between Groups	**7.74**	**7.74**	.246	.621
Within Groups	**16.72**	**16.72**	**1.38**	.244
Interaction	**2.63**	**2.63**	.216	.643

*Indicates significance at the .05 level **Indicates significance at the .001 level

For the BDI-II total scores, the findings showed that the intervention participants had a mean at testing time one of 25.38 (*SD* = 11.01) and a mean at testing time two of 13.67 (*SD* = 12.32), whereas controls had a mean of 25.74 (*SD* = 11.84) at testing time one and a mean of 23.29 (*SD* = 11.85) at testing time two. An interaction effect is evident because participants started off with highly similar scores at time one, and the intervention group finished with lower depression scores, especially when compared to their matched pairs in the control condition.

The Second Hypothesis: Locus of Control Water-only fasting, complete abstinence from all food and drink except water, increases internal locus of control. This hypothesis was not supported, as the CHLC, IHLC, and PHLC scores did not significantly change for the intervention or the control group from testing time one to testing time two. However, it was found that the intervention participants had a significantly higher score on the IHLC than the control participants at baseline.

As discussed earlier, the Internal Health Locus of Control (IHLC) subscale of the Multidimensional Health Locus of Control scale was used to evaluate the extent to which individuals felt they had control over their health behaviors (Wallston et al., 1978).

At testing time one, the difference between the two groups was found to be statistically significant on the IHLC, which shows the belief in a personal ability to directly impact health outcomes. The main effect of group was significant, F(1,82) = 12.04, *p* = .001. In other words, the groups were different for this measure of locus of control, indicating that the participants who were fasting had a higher internal locus of control. The findings for IHLC (Internal) Scores indicated the intervention participants had a means at testing time one of 28.26 *(SD* = 4.89) and a mean at testing time two of 28.60 *(SD* = 5.52), whereas controls had a mean of 25.71 *(SD* = 5.12) at testing time one and a mean of 24.71 *(SD* = 4.67) at testing time two.

The main effect of time was not significant *F*(1,82) = 1.7, *p* = .679. In addition, the interaction effect of group and time was not significant *F*(1,82) = 2.07, *p* = .154. In summary, although there was a slight change between the two groups from testing time one to testing time two, it was not significant.

Significance was not evident for the two subscales of the MHLC; (a) Chance Locus on Control (CHLC), the belief that outcomes are the results of fate and chance; and (b) Powerful Others Health Locus of Control (PHLC), the belief that health professionals or other people influence personal health.

Additional Findings Notable variables with the intervention participants included length of fast and previous number of times fasting, although there were no significant correlations between these variables and BDI-II, CHLC, IHLC, and PHLC scores at testing time one or testing time two. Thirty-eight intervention participants reported the length of their fast showing a range of 1 day to 25 days. The average length of fast was 6.79 days *(SD* = 4.33). The length of fast in days with rates and percentages are presented in Table 5.

Table 5

Length of Fast for Intervention Participants (n = 38)

Days fasting	*N*	%
1	1	**2.63**
2	2	**5.26**

3	3	**7.89**
4	2	**5.26**
5	12	**31.58**
6	2	**5.26**
7	6	**15.79**
8	1	**2.63**
10	6	**15.79**
14	1	**2.63**
15	1	**2.63**
25	1	**2.63**

Of the intervention participants, 15 (39.5%) were fasting for the first time, 5 (13.2%) for the second time, three (7.9%) for the third time, two (5.3%) for the fourth time, six and seventh time, three (7.9%) for the tenth time, one (2.6%) for the twelfth time, two (5.3%) for fifteenth time, one (2.6%) for twentieth, fortieth, and fiftieth time. Although 39.5% of the fasters were fasting for the first time, the experienced fasters skewed the mean to 6.58 number of fasts (*SD* = 10.42). These findings are presented in Table 6.

Table 6

Number of Times Fasting for Intervention Participants (n = 38)

# Fasts[a]	*N*	%
1	15	**39.5**
2	5	**13.2**
3	3	**7.9**
4	2	**5.3**
6	2	**5.3**
7	2	**5.3**
10	3	**7.9**

12	1	**2.6**
15	2	**5.3**
20	1	**2.6**
40	1	**2.6**
50	1	**2.6**

[a] Number includes the fast for the current study

Summary of Quantitative Data Two hypotheses were tested in this study. The first hypothesis was that participants who fasted would have a reduction in mean BDI-II scores as measured at baseline and after intervention compared to control participants. This hypothesis was supported as levels of depression dropped significantly between measurement times for the intervention group.

The second hypothesis was that fasting participants would have an increased internal locus of control from testing time one to testing time two, whereas the control group would remain the same. This hypothesis was not supported, as the IHLC scores did not significantly change for the intervention or the control group from testing time one to testing time two. However, the results indicated that the intervention participants had a significantly higher score on the IHLC than the control participants at baseline, indicating that they had a significantly stronger belief in a personal ability to affect health outcomes than the controls.

Participants who fasted, compared to participants who were not fasting, produced an observable difference along one primary dependent variable; level of depression as indicated by the BDI-II. In addition, pretest IHLC (Internal locus of control) scores were significantly higher for the intervention participants, when compared to controls.

Qualitative Analysis In order to gather additional information about the fasting participants' experience, a posttest questionnaire was designed. The rationale for including the questionnaire was the intention to learn the participants' experiences during their fast and to determine the extent of their fasting experience.

The questionnaire consisted of questions that determined the length of their fast and the number of times participants had previously fasted. In addition, fasting participants were asked where they had fasted and whether they had had any assistance from a doctor or coach. Six open-ended questions were included to gather information specific to the participants' fasting experience, specifically (a) their reason for fasting, (b) what their fasting experience ha been like, (c) their feelings about fasting again, (d) whether they had noticed any change in mood, (e) whether they had noted any correlation between fasting and depression, and (f) whether they had experienced anything life-changing.

In order to analyze the results from the Posttest Questionnaire for Intervention Participants, a Thematic Content Analyses was used. According to Rosemarie Anderson (1998, 2001), Thematic Content Analyses is a descriptive presentation of qualitative data that organizes the data according to key concepts and themes. Charles P. Smith (1992) defined the process of Thematic Content Analyses as the scoring of participants' messages, using the content and style to assess their experiences and characteristics (p. 1). The rationale for using Thematic Content Analyses to analyze the data from the posttest questionnaire was its suitability for examining the experiences and characteristics of the fasting participants.

Thematic Content Analysis Results from the Posttest Questionnaire for

Intervention were analyzed using Thematic Content Analysis (TCA). TCA allowed for a descriptive presentation according to key concepts and themes found in the fasting participants' description of their experience. The questionnaire contained 11 questions. Questions 1 through 5 were close-ended questions, whereas Questions 6 through 11 were open-ended. Because of this difference in question style, questions 1 through 5 were not included in the Thematic Content Analyses.

In the qualitative TCA, 8 themes were identified from the responses to the 6 questions that are outlined in Tables 7 through 13. The findings support a conclusion that the participants were all positively affected by their fasting experiences on multiple levels, including gaining a sense of personal growth. Varying levels of empowerment were reported as a result of their fasting experiences. The findings thus support the hypothesis that fasting can lessen the symptoms of depression.

The responses to each of the 6 open-ended questions (questionnaire Questions 6 through 11) were analyzed, and the results are displayed in the following section. The questions were: 6. What was your reason for fasting this time?

7. What has your experience of fasting been like?
8. How would you feel about fasting again in the future?
9. During or after the fast, did you notice any changes in your mood? If yes, please explain: 10. During or after the fast, did you notice a correlation between fasting and depression? If yes, please explain: 11. If there is something that you experienced while fasting that you will be incorporating into your life, please describe what that is: The close-ended questions (which were not included in the TCA) were: 1. What was the length of your fast in days?

2. Was this your first fast?
3. If you fasted previously, how many times before?
4. Where did you do your fast this time?
5. If you fasted with a Fasting Coach, at a Clinic, or a Retreat, please provide their name: The following is the TCA for each of the 6 open-ended questions, including themes and subthemes that were found along with samples of actual participants illustrations.

Question 6: What was your reason for fasting this time?

In order to more fully understand the subject's purpose for and reasoning regarding fasting, this question specifically asked the participant’s reason for fasting. A TCA was performed on participant responses to Question 6, and nine themes emerged: *Depression, Eating, Spirituality, Energy, Positivity, Health, Weight, Detoxification,* and *Death.* The themes, subthemes, and illustrations from participants’ responses are displayed in Table 7. Participant illustrations are repeated when applicable to two or more subthemes.

Table 7

Question 6: Themes, Subthemes, and Participant Illustrations (n = 35)

Theme

Subtheme	Participant illustration	
Eating (4 participants) (continued)	Break from eating (3 participants) (continued)	This was the right time for me to start cleansing and giving my organs a break from digesting food.
	Overeating (2 participants)	When I eat, I have the problem of not stopping, and I feel as though it closes off any other signal.
		To try and bring my appetite back into balance.
Spirituality (3 participants)	Improve spirituality (2 participants)	Spiritual breakthrough. I become more spiritually sensitive when I fast.
		To feel better physically and spiritually.
	Connect with deity (1 participant)	Gain health and grow closer to the Lord.
	Spiritual breakthrough (1 participant)	Spiritual breakthrough. I become more spiritually sensitive when I fast.
Health (12 participants)	Become healthier (7 participants)	Health, clarity, to feel clean. To feel in control, to gain health, to get discipline from myself, to control cravings.
		I knew I needed to do it for small health concerns I was having.
	Feel healthier (2 participants)	To feel healthier.
		I was feeling depressed and unhealthy.

	Relieve allergies (2 participants)	I’ m also trying to get more positive energy in my life and let go of pain and allergies.
		Trying to cleanse my system, clear up allergies, have more energy and have more positive thoughts!
	Pain (1 participant)	I’ m also trying to get more positive energy in my life and let go of pain and allergies.
	Attention to health (1 participant)	I felt like my body needed to be paid more attention to.
Weight (9 participants)	Lose weight (8 participants)	Regain some control over my poor eating habits, help with depression, and weight loss.
		I also needed to lose a little weight.
		I wanted to lose weight.
	Healthy weight (1 participant)	To become a healthy weight and to improve my health.
	Losing weight and detoxify (2 participants)	To detox and lose some weight. Get rid of toxins, lose weight.
Detoxification (5 participants)	Detoxify (5 participants)	Detox and general well-being. To detox my body.
		To detoxify and prepare for the coming holidays.
		To detoxify and prepare for the coming holidays.
Detoxification (5 participants) (continued)	Cleanse system (1 participant)	Trying to cleanse my system, clear up allergies, have more energy and have more positive thoughts!

		Just wanted to clean my system.
		This was the right time for me to start cleansing and giving my organs a break from digesting food.
	Feel clean (1 participant)	Health, clarity, to feel clean.
Energy (2 participants)	Increase energy (2 participants)	Trying to cleanse my system, clear up allergies, have more energy and have more positive thoughts!
		I’ m also trying to get more positive energy in my life and let go of pain and allergies.
Positivity (2 participants)	Increase positivity (2 participants)	Trying to cleanse my system, clear up allergies, have more energy and have more positive thoughts!
		I’ m trying to overcome depression. I’m also trying to get more positive energy in my life and let go of pain and allergies.
Death (1 participant)	Death in family (1 participant)	Just needed to recharge after a death in the family.

Question 7: What has your experience of fasting been like?

Question 7 was used in order to better understand the person’s experience of fasting. A TCA was performed on participant responses to Question 7, and 10 themes emerged: Depression, *Eating, Spirituality, Energy, Positivity, Peace, Focus, Sleep, Difficult,* and *Headaches.* The themes, subthemes, and illustrations from the participants’ responses are displayed in Table 8. Participant illustrations are repeated when applicable to two or more subthemes.

Table 8

Question 7: Themes, Subthemes, and Participant Illustrations (n = 35)

Theme

Subtheme

Participant illustration		
Depression (7 participants)	Depression worsened (1 participant)	My depression worsened and I was questioning everything in my life.
	Mood swings (1 participant)	I felt anger, and had some major mood swings the first 4 days, which subsided into feeling very clean, fresh and natural.
	Mental improvement (5 participants)	I always feel better physically, which opens my mental blocks and allows me to have more fun.
		I have been mostly drained of energy, but the mental clarity is like nothing I have ever experienced.
		I always feel physically and mentally better after a water fast.
Eating (5 participants)	Hunger (3 participants)	Hungry towards afternoon.
		It was hard and craving salty food at times.
		Mainly positive, although weakness and hunger worse than I expected.
	Hunger pangs (1 participant)	From what I’d read about fasting, I expected the fourth day (and subsequent days), not to have hunger pangs but that wasn’ t the case for me.
	Eating disorder (1 participant)	When I fast, I realize I have some food behavior problems in the evening. One time, this resulted in an eating disorder called bulimia.
Spirituality (2 participants)	Spiritual changes (2 participants)	Great, hard the first few days but there were many life changes that occurred throughout the fast both physically and spiritually.
		My spirit is always lifted when I feel lighter.
Energy (8 participants)	Energy level (2 participants)	By the fifth day I feel normal lots of energy and clear minded.
		Mainly positive, although weakness and hunger worse than I expected.
		I experience dizziness and weak by the fourth day.
Energy (8 participants)	Weakness (2 participants)	My energy levels were decent and my moods relatively stable… I did not have to exert any energy over the next 7 days, which is a challenge.
	Dizziness (1 participant)	I experience dizziness and weak by the fourth day.
	Fainting (1 participant)	Great, though I began my menstrual cycle and I almost fainted in at about the 3rd day.
	Tired (2 participants)	It was very tiring, but I notice I am sleeping less.
		I have been mostly drained of energy, but the mental clarity is like

		nothing I have ever experienced.
Peace (6 participants)	Peaceful (4 participants)	Am irritable the first 2 days then I start feeling better and at peace.
		I liked the focus I had and the feeling of peace.
		I had a headache for much of day 3 (as I have had in the past while fasting), but once that was gone it was very peaceful, if somewhat awkward to explain to friends.
	Calm (2 participants)	Calm.
		I feel calm and determined, happy and focused.
Focus (3 participants)	Increased focus (3 participants)	I feel calm and determined, happy and focused.
		I liked the focus I had and the feeling of peace.
		I am more alert, energetic, able to focus and get things done.
Sleep (2 participants)	Slept less (1 participant)	It was very tiring, but I notice I am sleeping less.
	Slept better (1 participant)	From the second night on, I slept quite well, though by the 3rd day I was easily fatigued which is why I didn’t continue fasting.
Positivity (5 participants)	Very positive (5 participants)	Very positive.
		It’s been great!
		Very good, initially hard, but gets easier.
	Mainly positive (2 participants)	Mainly positive, although weakness and hunger worse than I expected.
		Overall good.
Difficult (12 participants)	Challenge (6 participants)	Difficult.
		It was difficult at times.
		It wasn’t too bad, but I can’t imagine doing this for a long period of time.
	Difficulty lessens (3 participants)	Very good, initially hard, but gets easier.
		Nothing unusual first 3 days are the toughest then it gets easier.
		It’s always a challenge the first few days, but after a while, it’s a breeze.
	Difficult the first few days (4 participants)	Great, hard the first few days but there were many life changes that occurred throughout the fast both physically and spiritually.
		It was extremely difficult for the first three days, then became

		easier for the next four.
		It was terrible at first, but after getting through the first few days it just became routine.
	Not as difficult as anticipated (1 participant)	Not as hard as I thought it would be.
Headaches (3 participants)	Headache on second day (2 participants)	Usually I have headaches the first two days.
		The first 4 days were for the most part effortless, besides some headaches on the second day.
	Headaches during prior fasting (1 participant)	I had a headache for much of day 3 (as I have had in the past while fasting), but once that was gone it was very peaceful, if somewhat awkward to explain to friends.

Question 8: How would you feel about fasting again in the future?

This question was designed in order to learn how the participants felt about fasting again in the future. A TCA was performed on participant responses to Question 8, and nine themes emerged: *Spirituality, Religion, Self-Improvement, Lifestyle, Weight, Health, Reward,* and *Planning.* The themes, subthemes, and illustrations from the participants' responses are displayed in Table 9. Participant illustrations are repeated when applicable to two or more subthemes.

Table 9

Question 8: Themes, Subthemes, and Participant Illustrations (n = 34)

Theme

Subtheme

Participant illustration

Spirituality (1 participant)	Spiritual discipline (1 participant)	It’s part of my spiritual discipline as a Christian and trying to condition myself to do it often.
Religion (1 participant)	Christianity (1 participant)	It’s part of my spiritual discipline as a Christian and trying to condition myself to do it often.
Self-Improvement (1 participant)	Condition the self (1 participant)	It’s part of my spiritual discipline as a Christian and trying to condition myself to do it often.
Lifestyle (1 participant)	Lifestyle activity (1 participant)	Fasting is a part of my life.
Weight (1 participant)	Lose weight (1 participant)	I think that I would, if it helps me to lose weight.
Health (1 participant)	Improve health (1 participant)	I have fasted ever since I was a teenager and plan to continue as I believe it is a key to longevity and health.
Reward (1 participant)	Rewarding (1 participant)	I would definitely fast again in the future, it’s very rewarding.
Planning (13 participants)	In planning stages (3 participants)	Planning to.
		Definitely would and plan to do it.
		I already did it this past Monday. I hope to do it once a week.
	Affirmatively planning (5 participants)	I will be fasting again in the future.
		It’s part of my spiritual discipline as a Christian and trying to

		condition myself to do it often.
		Definitely would and plan to do it.
	Plan to as needed (3 participants)	Always will do it when needed.
.		I think that I would, if it helps me to lose weight
		I would be prepared to do so.
	Designing plan (2 participants)	I would like to do it with some directions next time.
.		I expect I’ll try it again, though planning it around a less busy time of the year

Question 9: During or after the fast, did you notice any changes in your mood?

Question 9 was intended to find out if participants noticed any change in their mood, either during or after the fast. A TCA was performed on participant responses to Question 9, and 10 themes emerged: *Depression, Mood, Spirituality, Eating, Energy, Positivity, Peace, Anxiety, Self,* and *Sleep.* The themes, subthemes, and illustrations from the participants' responses are displayed in Table 10. Participant illustrations are repeated when applicable to two or more subthemes.

Table 10

Question 9: Themes, Subthemes, and Participant Illustrations (n = 32)

Theme

Subtheme

Participant illustration		
Depression (32 participants)	Depression lessened (3 participants)	I am less sad and anxious about where I am in life.
		Yes, before the fast I was very down and lazy, but after the water fast, I am more optimistic, happy and full of energy.
		I was a little irritated and depressed for the first couple days, but after that I felt calmer and happier.
	Depression worsened (1 participant)	I became more depressed after the 4th day.
	Irritability (10 participants)	The first two days I am agitated and irritable.
		More irritable, less friendly.
		More irritable during the fast.
	Happier (7 participants)	I felt happier, less irritable, more self-confident.
		Yes, happier and more open to receive.
		I have more patience; things do not bother me as much as before, I am happier, more lovable and understanding.
	Increased sex drive (1 participant)	Sex drive through the roof!
Mood (11 participants)	Better mood (6 participants)	Much better mood after and during fast.
		My mood fluctuates but generally improves as I go along, as I know I am doing a good thing for my body.
		My mood is elevated—I get to a point where nothing really bothers me.

	Worse mood (1 participant)	At first, I get moody and irritable (detoxing), and a bit tired.
	Hopeful (1 participant)	Felt more hopeful.
	Invigorated mood (1 participant)	By the time I finish I am so invigorated.
	Emotions (2 participants)	Felt more in tune with nature and my emotions.
Mood (11 participants) (continued)	Emotions (2 participants) (continued)	My thoughts and emotions are fleeting—everything moves quicker and I don’t linger in sadness or anger or even joy for too long.
Spirituality (3 participants)	Ecopsychology (1 participant)	Felt more in tune with nature and my emotions.
	Increased spirituality (1 participant)	In the past, after a week I really start to experience wonderful spiritual expansion and awareness, sensitivity and ecstasy, although there is a tiredness that sets in, especially after 10 days, so I usually stop then.
	Meditation (1 participant)	I felt very tired and lethargic at times, but I used this as a chance to fully rest myself and focus on meditation and self-actualization.
Eating (4 participants)	Hunger (2 participants)	Very hungry, temperamental.
		I was thinking about food for several days, as I had people eating all around me. That made me frustrated and hungry.
	Diet (2 participants)	Yes, but not much different than in everyday life if I do not get enough sleep, drink caffeine or eat too much sugar.
		I also found that I have a lot more time on my hands when I don’t worry about eating.
Energy (7 participants)	Increased energy (3 participants)	I felt progressively irritated and tired until the end of the third day, after which I felt more at peace than usual and more subjectively energetic, though in reality I was physically weak.
		I have energy that I had once in my youth years, this is a natural high that I would love to hang onto forever.
		Yes, before the fast I was very down and lazy, but after the water fast, I am more optimistic, happy and full of energy.

	Decreased energy (3 participants)	It gives me a reason to be low energy, cranky and reclusive.
		Yes sluggish at times.
		I felt very tired and lethargic at times, but I used this as a chance to fully rest myself and focus on meditation and self-actualization.
	Weakness (1 participant)	I felt progressively irritated and tired until the end of the third day, after which I felt more at peace than usual and more subjectively energetic, though in reality I was physically weak.
Positivity (1 participant)	Increased positivity (1 participant)	Yes. I feel more positive and upbeat when I am fasting.
Peace (5 participants)	Peaceful (3 participants)	I think my feeling of well-being and peace increased during the fast.
		I felt progressively irritated and tired until the end of the third day, after which I felt more at peace than usual and more subjectively energetic, though in reality I was physically weak.
		For me 5 days is a short fast, so no real changes beyond calm peacefulness.
	Calm (2 participants)	I was a little irritated and depressed for the first couple days, but after that I felt calmer and happier.
		I felt calm and collected.
Anxiety (1 participant)	Less anxious (1 participant)	I am less sad and anxious about where I am in life.
Self (2 participants)	Self-confidence (1 participant)	I think my overall confidence increased, as well.
	Self-actualization (1 participant)	I felt very tired and lethargic at times, but I used this as a chance to fully rest myself and focus on meditation and self-actualization.
Sleep (2 participants)	Slept less (1 participant)	My sleep patterns change—I can’t sleep as much.
	Disturbed sleep (1 participant)	Also I seem to sleep more than normal but still not like I should.

Question 10: During or after the fast, did you notice a correlation between fasting and depression? If yes, please explain.

In order to understand if participants perceived any association between fasting and depression, Question 10 asked whether the participant noticed a correlation. A TCA was performed on participant responses to Question 10, and eight themes emerged: *Depression, Eating, Focus, Detoxification, Difficult, Energy, Positivity,* and *Peace.* The themes, subthemes, and illustrations from the participants' responses are displayed in Table 11.

Table 11

Question 10: Themes, Subthemes, and Participant Illustrations (n = 33)

Theme

Subtheme

Participant illustration

Depression (24 participants)	Depression worsened (3 participants)	I felt depressed only the first few days of the fast.
		I felt more depressed a few days into the fast but better once I started eating again.
		When I began to eat again on the seventh day I experienced more depression symptoms, though a lot of that may have been guilt over ending the fast (I had planned on going indefinitely).
	Depression lessened (13 participants)	Fasting cures at least depression at the mild depression I get sometimes.
		My depression is much less when I fast.
		Yes, the more you fast the less depressed you feel.
	Food and depression (5 participants)	I feel if you eat right, exercise, and fast a couple days a week depression will no longer be an issue.
		I tend to lean toward eating sugar and carbs, which makes me tired and depressed. When I eliminate those things, I don’t feel depressed.
		Sometimes, food makes me depressed.
	No difference in depression (1 participant)	No. I suffer from depression and did not notice a difference in my moderately depressed mood.
	Happier (1 participant)	My previous bouts of depression have all but disappeared. I am much more lively and happy now.
	Worried less (1 participant)	I don’t tend to be very depressed but do worry sometimes. I don’ t remember doing that during the fast.
Eating (4 participants)	Refraining from eating (1	Restraining from foods made me feel like my own victim against myself.

	participant)	
	Hunger (1 participant)	Waking up ravenous and then I would shed a few tears and wonder why I'm doing this to myself and so on.
	Fear of food (1 participant)	After that, I was able to overcome those feelings and food fears and feel amazing.
Focus (4 participants)	Create clarity (1 participant)	It does however often create spaces of clarity, especially if I do not fill that time with busy-ness.
	Clear mind (3 participants)	It seems to produce a lot of hope and a clear mind.
		Am able to think more clearly.
.		I seem to think more clearly and be more focused.
Detoxification (3 participants)	Toxic (3 participants)	Fasting brings out lots of different moods depending on how toxic you are and how often you fast.
		Yes. Toxic emotions are purged. Am able to think more clearly.
		I believe many physical toxins are cleansed, but without working with someone, the mental and emotional toxins resist.
Difficult (2 participants)	Exhausting (1 participant)	Like I said the first 2 days are mentally exhausting but all that lifts off as I kept going.
	Weakness (1 participant)	Just notice I was weaker.
Energy (1 participant)	Less energy (1 participant)	Although at times I was more drained or low energy, I felt in control of my life.
Positivity (1 participant)	More positive (1 participant)	I think I was more positive and present in my way of communicating with others.
Peace (1 participant)	Peaceful (1 participant)	Cleaning your inside to me is directly connected to cleaning your mind too, so you feel much more in peace while fasting.

Question 11: If there is something that you experienced while fasting that you will be incorporating into your life, please describe what that is.

In order to learn whether participants experienced anything that they would be integrating into their life, Question 11 asked participants if they experienced something that they would be incorporating into their life. The goal of this question was to ascertain if any participants had experienced profound shifts during the fasting experience. The question was worded in such a way as to try and avoid being suggestive and yet invite exploration.

A TCA was performed on participant responses to Question 11, and 11 themes emerged: *Eating, Spirituality, Religion, Weight, Peace, Positivity, Sleep, Health, Self, Reward,* and *Death.* The themes, subthemes, and illustrations from the participants' responses are displayed in Table 12. Participant illustrations are repeated when applicable to two or more subthemes.

Table 12

Question 11: Themes, Subthemes, and Participant Illustrations (n = 27)

Theme

Subtheme

Participant illustration		
Eating (9 participants)	Food (2 participants)	Life is short and we only live once, though we are peppered to eat lots of unhealthy items it’s so important to treat our bodies well, as they are the only ones we will have in this life time. I will constantly read the word of God. It came more alive as I fasted. I will make it my daily bread.
	Conscious eating (6 participants)	Increased awareness about the quality of food I am consuming, appreciating the taste of the food and eating more slowly. Eating less and more mindfully so that I can be more fully present and a better listener. Just to be more aware of what I’m putting into my body.
	Emotional eating (1 participant)	Keeping the focus off food. To start thinking of food as sustenance rather than entertainment or a stress reliever.
Spirituality (6 participants)	Inspired (3 participants)	I will constantly read the word of God. It came more alive as I fasted. I will make it my daily bread. My eyes were opened thanks to seeking Jesus with my whole heart. I want to take the self-control I learned and practice it in all aspects of my daily life now.
	Mindfulness (1 participant)	Besides the practice of fasting itself… mindfulness in all of my actions in an everyday focus.
	Detachment (2 participants)	You can make your own life, you and only you are in control of being the happiest person on earth, no material requirements. The power of stopping… although it is not a good idea I have in the past fasted whilst still having to work hard—nowadays I love myself enough to gift myself with time off.
Religion (3 participants)	God (2 participants)	I will constantly read the word of God. It came more alive as I fasted. I will make it my daily bread. Using the fasting time to pray and focus on God.
	Prayer	Using the fasting time to pray and focus on God.

	(1 participant)	
Religion (3 participants) (continued)	Christianity (1 participant)	My eyes were opened thanks to seeking Jesus with my whole heart.
Weight (1 participant)	Healthy weight (1 participant)	I intend to be more active so that I will maintain healthy weight once I get there.
Peace (2 participants)	Calm (2 participants)	Trying to stay calm and use my energy in more positive, healthy ways.
		I also become calmer for a while after each fast.
Positivity (2 participants)	Increased positivity (1 participant)	Trying to stay calm and use my energy in more positive, healthy ways.
	Goal achievement (1 participant)	Optimistic thinking in achieving your goals.
Sleep (1 participant)	Disturbed sleep (1 participant)	I am going to attempt to fast one day a week to see if my sleep patterns improve.
Health (6 participants)	Drinking water (5 participants)	Drinking more water.
		Drinking lots of water, that did make me feel good.
		I've gotten into the habit of carrying a bottle of water instead of diet soda.
	Improved health (1 participant)	Better health and a better attitude.
Self (1 participant)	Self-worth (1 participant)	I realized that eating a lot contributes greatly to my low self-worth.
Reward (1 participant)	Rewarding (1 participant)	Fasting is not punishment but reward, yet it can feel like approaching death especially after more than a week into it when sleep gets very disturbed.
Death	Approaching	Fasting is not punishment but reward, yet it can feel like approaching

(1 participant)	death (1 participant)	death especially after more than a week into it when sleep gets very disturbed.

Depression Subtheme and Participant Illustrations for Questions 9 and 10

A TCA was performed examining responses to Questions 9 (During or after the fast, did you notice any changes in your mood?) and 10 (During or after the fast, did you notice a correlation between fasting and depression? If yes, please explain.). This was done in order to compare fasting participants who had previously fasted (veterans) with those who fasted for the first time while in my study (first-timers).

The results of the TCA for the responses to Questions 9 and 10 are displayed in Table 13. The main theme from the analysis of these two questions was *depression* and there were five subthemes: (a) *Depression Lessened,* (b) *Depression Worsened,* (c) *Depression Did Not Change,* (d) *Irritability Increased,* and (e) *Irritability Lessened.* All participant illustrations are included for both the first-time fasters (n = 10) and the veteran fasters (n = 24). For the sake of clarity in the display of the findings, participants' responses to Question 9 (Q9) and Question 10 (Q10) are given within the same illustration when applicable to the subtheme. In addition, participant illustrations are repeated when applicable to two or more subthemes.

In terms of responses to Questions 9 and 10, there were 2.4 times as many fasting veterans as there were first-time fasters. Sixty percent of the first-timers, as compared with 62.5% of the veterans, reported that their depression lessened. In terms of depression worsening, 30% of the first-timers, as compared with 12.5% of the veterans, reported that their depression increased. Furthermore, 40% of the first-timers, as compared with 16.5% of the veterans, indicated that they did not notice any change in depression symptoms. Thirty percent of the first-timers mentioned increased irritability, as did 30% of the veterans. However, 6 of the 8 veterans (75%) who reported an increase in irritability indicated that it had occurred only during the first few days of the fast. In addition, the two participants who said that their irritability decreased were both veterans.

Table 13

Depression Subtheme and Participant Illustrations for Questions 9 and 10 (n = 34)

Participant illustration (Question #)

Subtheme	First-time fasters

Veteran fasters		
	(*n* = 10)	(*n* = 24)
Depression lessened (21 participants: 6 first-timers, 15 veterans)	I wasn’t as sad (Q9). Yes. I seem to think more clearly and be more focused (Q10).	Much better mood after and during fast (Q9). Less depressed now than before (Q10).
	Felt more in tune with nature and my emotions (Q9). Felt less depressed as time went on (Q10).	Much happier (Q9). Fasting cures at least depression at the mild depression I get sometimes (Q10).
	I felt calm and collected (Q9). Yes, I felt more at ease with myself than I have in a long time (Q10).	Yes. I feel more positive and upbeat when I am fasting (Q9). Yes. I am more optimistic and in a better mood when I’m fasting (Q10).
Depression worsened (6 participants: 3 first-timers, 3 veterans)	More irritable, less friendly (Q9). More irritable during the fast (Q9).	I became more depressed after the 4th day (Q9). I felt more depressed a few days into the fast but better once I started eating again (Q10).
	The stupidest little thing would aggravate me for no apparent reason (Q9).	When I began to eat again on the seventh day I experienced more depression (Q10).
		During the water fast, I felt depressed (Q10).
Depression did not change (8 participants: 4 first-timers, 4 veterans)	No (Q9). No (Q10). I suffer from depression and did not notice a difference in my moderately depressed mood (Q10).	Yes, but not much different than in everyday life (Q9). I have been exploring this for years and as far as I can tell, it has made no significant changes in my depression (Q10).
	No more depressed, but I did feel like I was thinking more (Q10).	No real changes beyond calm peacefulness (Q9). No (Q10).

Irritability increased (11 participants: 3 first-timers, 8 veterans)	More irritable, less friendly (Q9). More irritable during the fast (Q9).	The first two days I am agitated and irritable (Q9). I felt progressively irritated and tired until the end of the third day (Q9).
	The stupidest little thing would aggravate me for no apparent reason (Q9).	I was a little irritated and depressed for the first couple days (Q9).
Irritability lessened (2 participants: 0 first-timers, 2 veterans)		I felt happier, less irritable, more self-confident (Q9).
		I was a little irritated and depressed for the first couple days, but after that I felt calmer and happier (Q9).

TCA of Posttest Questionnaire for Intervention (Fasting) Participants After completion of the Thematic Content Analyses for Questions 6 through 11, results revealed that certain subthemes concerning depression were repeated in Questions 7, 9, and 10. The TCA for questions 7, 9, and 10 contained the subtheme, *depression worsened,* and questions 9 and 10 had the subtheme, *depression lessened.* More important, the nature of some of the participant illustrations suggested the potential for some degree of fanaticism. For example, in response to question 10 (During or after the fast, did you notice a correlation between fasting and depression? If yes, please explain), participant responses included the following: (a) “Most definitely. Fasting brings out lots of different moods depending on how toxic you are and how often you fast. I feel if you eat right, exercise, and fast a couple days a week depression will no longer be an issue”; (b) “I have been exploring this for years and as far as I can tell, it has made no significant changes in my depression”; and (c) “Yes I feel that fasting can lift depression, if it is from bad diet or from emotional issues.” These responses were from intervention participants who had fasted two or more times. Due to the enthusiastic and devotional nature of these responses, an additional TCA was performed on Questions 9 and 10 to compare participants who were fasting for the first time (first-timers) with participants who had fasted two or more times (veterans).

Veterans Compared to First-Time Fasters A TCA was performed examining Questions 9 (During or after the fast, did you notice any changes in your mood?) and 10 (During or after the fast, did you notice a correlation between fasting and depression? If yes, please explain). This was done in order to compare fasting participants who had previously fasted (veterans) with those who fasted for the first time while in my study (first-timers).

In terms of responses to Questions 9 and 10, there were 2.4 times as many fasting veterans as there were first-time fasters. Sixty percent of the first-timers, as compared with 62.5% of the veterans, reported that their depression had lessened. I initially expected that more of the veterans would have reported a lessening in depression, as due to a potential bias towards the benefits of fasting. However, that did not appear to be the case.

The fact that fasting is a highly demanding physical and psychological task may have caused both the first-timers and the veterans to expect a positive outcome. In retrospect, it probably would have been useful to ask the first-timers for what duration they had been planning to do their first fast. Their responses could have potentially revealed an expectation of the benefits of fasting that was similar to the expectations of the veterans.

In terms of depression worsening, 30% of the first-timers, as compared with 12.5% of the veterans, reported that their depression had increased. In addition, 40% of the first-timers, as compared with 16.5% of the veterans, indicated that they had not noticed any change in depression symptoms. These two groups of responses may be more indicative of the presence of demand characteristics on the part of the veterans than were their responses about the lessening of depression. It may also represent a developed tolerance to increased depression symptoms during the first few days of the fast on the part of the veterans. Other responses about irritability suggested that the veterans may have been slightly more aware of their mood changes. Thirty percent of the first-timers mentioned increased irritability, as did 30% of the veterans. However, 6 of the 8 veterans (75%) who reported an increase in irritability indicated that it had occurred only during the first few days of the fast. Furthermore, the two participants who reported decreased irritability were both veterans. This finding suggests that veteran fasters may be more cognizant of their mood during fasting.

Limitations of This Research Because my study was not based on a random sampling, the choice of participants was limited by my ability to identify those who might have been appropriate for this study, and, therefore, consisted of a convenience sample. For ethical reasons, I could not obtain a random sample from the population and prescribe fasting to half of them.

The BDI-II itself contains some items that may pose a threat to internal validity. A number of questions on the BDI-II scale examine loss of energy, as well as both increase and decrease in sleep and appetite (Beck et al., 2009). Because fasting affects energy, sleep, and appetite and the BDI-II measures all three, these variable should be considered. However, these items should not be problematic, given that energy, sleep, and appetite tend to normalize after a fast and the intervention group is being measured before and at the conclusion of treatment. Exceptions to this would be intervention group participants who are fasting for longer than 2 weeks. For these participants, their testing Time 2 data were collected 2 weeks into the fast, just as for the other participants, so it should not matter that they were fasting longer because theoretically they would still be affected by fasting.

Advantages of my research design included an efficient use of research participants, given that recruiting participants who are willing to fast can be challenging. In addition, testing the participants twice eliminated the need to recruit twice as many participants. Furthermore, using a within-subjects measurement allowed for more comparability of participant data. In other words, there was increased control of subject variability because participants were compared with themselves.

One of the most practical applications of this research is the suggestion that fasting may reduce the symptoms of depression. However, research has indicated that there are a great many therapies, medications, and lifestyle changes that can help depression. In addition, researchers have suggested that self-efficacy and taking responsibility may be characteristics that are protective against depressive symptoms

(Maciejewski, Prigerson, & Mazure, 2000). Psychologist Albert Bandura (1977) defined self-efficacy as the belief in one’s ability to succeed in specific situations (Bandura, 1977). Similarly, Hoffer (1951/2002) proposed that self-efficacy can explain the choice or level of the activity engaged in, as well as the likelihood of its successful completion. In light of this observation, it is important to note that, even if further research finds that fasting is useful in the treatment of depression, it would represent just one of many options available, and personal characteristics of participants should always be a consideration in the recommendation of any treatment.

In choosing a method to help depression, patients must weigh the risks against the benefits. Mental health professionals and physicians can prove particularly useful in making such choices. Certain therapies, such as fasting, have the potential to create a huge paradigm shift in an individual’s thinking. For some people, however, this shift could theoretically prove to be more harmful than helpful. This is primarily due to the need we have for food—a physical demand that varies in its requirements from individual to individual and in relation to people’s circumstances and that may indicate that fasting is not a suitable treatment for some people. Mohandas Gandhi, a well-know authority on fasting, said, Fasting is a fiery weapon. It has its own science. No one, as far as I am aware, has a perfect knowledge of it. Unscientific experimentation with it is bound to be harmful to the one who fasts, and it may even harm the cause espoused. No one who has not earned the right to do so should, therefore, use this weapon. (as cited in Bondurant, 1958, p, 37) ***Additional Potential Threats to Validity*** Factors beyond the researcher’s control included the online nature of the study. Differences in geographical location—and the international nature of the sample—could have represented threats to internal validity. Since this study deliberately selected people who were willing to fast for extended periods of time, this population may well reflect a positive bias and openness to such experiences that cannot be generalized to other populations. In addition, participants with a history of fasting may have different beliefs about the effects of fasting than would people who have never fasted. These potential differences may affect the generalizability of the present findings and may have posed a potential threat to external validity. Furthermore, the researcher did not inquire about present and past history of eating disorders, which could be a potential nuisance variable.

The Implications for True Believers In 1951, Eric Hoffer published, *The True Believer: Thoughts on the Nature of Mass Movements,* a book that discusses the psychological causes of fanaticism. Hoffer (1951/2002) suggested that the ideology of mass movements is adopted by individuals because they believe the promise of a better future. This may apply to unproven complementary and alternative therapies, such as fasting, when individuals hold a preintervention belief that it will help their psychological, medical, and/or spiritual condition.

In my study, the Thematic Content Analyses conducted on the intervention participants' responses to the questionnaire suggested that most, if not all, of the fasting participants were true believers in fasting. Many of the participant illustrations suggested that the participant had believed prior to the study that fasting could improve his or her condition (psychological, medical, or spiritual). Examples of such participant illustrations included statements such as (a) "This was the right time for me to start cleansing and giving my organs a break from digesting food"; (b) "I become more spiritually sensitive when I fast"; and (c) "I always feel better physically, which opens my mental blocks and allows me to have more fun."

Fasting can be a relatively demanding activity—physically, psychologically, and spiritually. An argument could be made that the degree of difficulty during a fast must be supported by a strong belief that fasting is beneficial in order for the participant to successfully complete the fast. In addition, fasting is a unique type of personal sacrifice because the participant must give up something that is needed to sustain life.

In reference to the self-sacrifice among true believers, Hoffer (2002/1951) noted that "the readiness for self-sacrifice is contingent on an imperviousness to the realities of life" (p. 79). In my research, this may have manifested in intervention participants supporting through their responses a pre-existing belief in the benefits of fasting for depression.

Russell W. Belk (2008) pointed out that "when consumers are strong believers, they want to evangelize, that is, to be angels broadcasting the good news" (p. 461). Because fasting is an act of asceticism and self-denial, it may be seen by some as a noble act. This perception, too, may have created demand characteristics in that intervention participants may have attempted to carry the message to others. Hoffer (2002/1951) addressed the idea that self-denial could encourage the true believer to fulfill this role: The act of self-denial seems to confer on us the right to be harsh and merciless toward others. The impression somehow prevails that the true believer, particularly the religious individual, is a humble person. The truth is that the surrendering and humbling of the self breed pride and arrogance. The true believer is apt to see himself as one of the chosen, the salt of the earth, a prince disguised in meekness, who is destined to inherit this earth and the kingdom of heaven, too. He who is not of his faith is evil; he who will not listen shall perish. (p. 99) A fanatic is characterized by an "excessive enthusiasm and often intense uncritical devotion" (Merriam-Webster, 2010). Fasting is well-known for its fanatics, most notably anorexics (APA, 2000) and the fasting Catholic saints (Bell, 1985; Bynum, 1987; Vandereycken & van Deth, 1994). An argument could be made that political fasters such as Mohandas Gandhi (Russell, 2006), Ceasar Chávez (Chavez, Jenson, & Hammerback, 2002), and Bobby Sands (Beresford, 1997) were fanatics primarily because they either died or came close to death while fasting.

When examining my attitude toward the subject of fasting, it was apparent how my passion and devotion to the practice of fasting could have contributed to researcher bias. However, a strong potential for researcher bias is present in most if not all research, primarily because scientists tend to study topics that hold the most interest for them.

Follow-up Study

In terms of a follow-up study looking at the effects of water-only fasting on the symptoms of depression, a two group experimental pretest-posttest design with additional follow-up dates needs to be conducted to test the long-term benefits of fasting. This would be useful in determining if the effects of fasting remain constant over time, and what factors influences the outcome. Additional considerations in this model would be the diet intervention participant's used post-fast, and how that influenced results at 30 and 60 days. In therapeutic fasting, a low fat vegan diet is recommended prior to and after fasting in order to maintain the results from the fast, and it would useful to find out if adherence to that helped maintain mental health gains (Fuhrman, 1995).

9

The Practice of Asceticism

The physical universe can be affected by such ascetic feats as fasting.

—ROY C. AMORE & LARRY D. SHINN (1981, p. 141)

In order to understand the complex religious and spiritual characteristics of fasting, it is useful to look at the broader context of asceticism, primarily because fasting is the most common and enduring ascetic activity (Lansford, 2004). Most people probably do not realize that when they fast for a spiritual reason—even for a few hours—they are partaking in asceticism, one of the oldest known spiritual disciplines.

Asceticism, also called *ascesis,* is the practice of rigorous self-denial and active self-restraint and is performed as a spiritual discipline. Like fasting, the origins of asceticism are traced to prehistory—to primitive and archaic society (Foster, 1998; Kaelber, 2005).

In all faiths, religious ascetics—especially saints and holy figures—have engaged in fasting as a path to spiritual perfection. Hindu yogis, Greek priests, and Christian martyrs were all ascetics who took part in fasting and other physical mortifications (Kaelber, 2005). Many of the founders of the world's great religions practiced extreme asceticism. For example, the Buddha was severely emaciated after undergoing a variety of severe ascetic practices, including prolonged fasting (Wilson, 2004).

From a historical perspective, asceticism has been studied from different systems of psychology, both East and West. Scholars have examined ascetical behaviors in an attempt to better understand its relationship with the self and the ego, the psyche and the mind, and states of consciousness and liberation. Asceticism has a special relationship with psychology, as experts continually attempt to ascertain the extent to which ascetic behavior is pathological, both currently and historically (Brumberg, 1988; Bushell, 1995; Cole & Winkler, 1994; Fallon & Horwath, 1993; Ishaq, 1991; Kroll, & Bachrach, 2005; Mahr, 2003; Vandereycken & van Deth, 1994; Ware, 1995).

Defining Asceticism

It may be easiest to define asceticism by its activities rather than its motive. According to Walter Kaelber (2005) in the *Encyclopedia of Religion,* asceticism is still widely practiced today in such forms as "fasting, seclusion, infliction of pain, and even bodily mutilation" (p. 526). Other ascetic practices include sexual abstinence, self-imposed poverty and begging, and various other physical and mental activities. Self-inflicted physical acts tend to be more extreme and can include whipping, burning, and lacerating. Mental ascetic activities, such as meditation, are considered mild to moderate and are generally less painful. It is important to note that fasting can be a mild, moderate, or severe ascetic activity. For example, the mildest form of fasting would be skipping a meal and most extreme would be fasting to death.

Many ascetics believe that the action of purifying the body also purifies the soul, thereby facilitating inner peace and a greater connection with divinity (de Dreuille, 2000). The ascetic act itself may take the form of rituals, the renunciation of pleasure, or self-mortification. Self-mortification, also known as "mortification of the flesh," is an expiatory act of penance that often serves as a path to sanctity (Gaddis, 2005; Gluckich, 2001). Any form of asceticism that acts upon the body, such as fasting, is considered mortification of the flesh. The strongest meaning of the term "self-mortification" is "renunciation of one's own body" (Durt, 1998, p. 58). The practice is primarily found in religious and spiritual contexts.

> Ascetics maintain that self-imposed constraints bring them greater freedom and the ability to resist potentially destructive temptations (MacKendrick, 1999; Tolbert, 1999). Asceticism can be a self-potentiating act, laying a foundation for personal and professional endeavors. Kallistos Ware (1995) explained the basis of this philosophy:

> Asceticism, that is to say, leads us to self-mastery and enables us to fulfill the purpose that we have set for ourselves, whatever that may be. A certain measure of ascetic self-denial is thus a necessary element in all that we undertake, whether in athletics or in politics, in scholarly research or prayer. Without this ascetic concentration of effort we are at the mercy of exterior forces, or of our own emotions and moods; we are reacting rather than acting. Only the ascetic is inwardly free. (p. 3)

Certain branches of Christian monasticism and Indian religions have taught that salvation and liberation are the result of a process of mind-body transformation affected by exercising restraint with respect to actions of body, speech, and mind (Dunn, 2003). To this end, it is believed that ascetic activities such as fasting can assist in the achievement of these goals.

The founders and earliest religious practitioners—most notably the Buddha, Mahavira, and the Christian desert fathers—lived extremely austere lifestyles, fasting extensively, and refraining from sexual gratification and the accumulation of material wealth (Dunn, 2003; Osho, 1973; Wilson, 2004). However, it is worth noting that asceticism is not so much a renunciation of the enjoyments of life as it is the recognition that spiritual and religious goals can be impeded by such indulgences. In his book *Transpersonal Development: The Dimension Beyond Psychosynthesis,* Robert Assagioli (2007) offered a similar definition of asceticism, describing its broadness and function:

> The word asceticism has acquired what I would regard as rather pejorative connotations, because certain excesses on the part of some ascetics, but etymologically it has a better, wider meaning than this. In Greek, it simply means ‘exercise, discipline, training’, yet it has become associated with harsh imposition and provocation. This is the path that some Orientals have chosen, the more rigid Buddhists in particular, and it is also the way of certain ascetic Christian mystics, from the anchorites of Thebaid to St. Bernard who, when traveling through Switzerland, would shut his eyes so that the beauty of the lakes and the mountains would not distract him from his meditations, and all the way down to the curate who had qualms about smelling the rose. This is a way that readily arouses criticism and rebellion-it seems isolationist, inhuman, almost blasphemous. If

> we consider it impartially it can be a considerable short-cut, a violent yet powerful means of reaching a Supreme Being, having firmly severed all ties. Moreover it may be a necessary state, or at least a useful one, along the path to detachment for those who are too easily allured by the desires of the senses, and for those who are enslaved to them and want to be released. (p. 243)

According to Russian Orthodox philosopher Nicolas Berdyaev, “Asceticism means the liberation of the human person” (as cited in Ware, 1995, p. 3). In a broader context, describes a life that is characterized by abstinence from worldly pleasures. Those who practice ascetic lifestyles often perceive their practices as virtuous and pursue them in order to achieve greater spirituality (Kaelber, 2005).

The different definitions of asceticism can make finding an agreed upon definition challenging. Worldviews of asceticism are enormously subjective. In the book *The Mystic Mind the Psychology of Medieval Mystics and Ascetics,* Jerome Kroll and Bernard Bachrach (2005) said,

> There is no universally accepted definition of asceticism. Viewed from a cross-cultural perspective, ascetic practices have served as the concrete and tangible expression of various philosophies found universally, that worldly concerns at every level interfere with transcendental experiences and with an appreciation of the true nature of reality. (p. 17)

Inner-Worldly and Otherworldly Asceticism

In an attempt to define ascetic behavior, scholars have developed a number of terms to describe various types of asceticism. For example, *primitive asceticism* generally refers to asceticism in primitive cultures, and *extreme asceticism* is reserved for feats that are perceived as horrific to most civilized cultures. Other terms that are used to describe the nature of asceticism are *inner-worldly* and *otherworldly.* Early twentieth century German sociologist Max Weber made a distinction between *innerweltliche* and *ausserweltliche* asceticism; translated to *inner-worldly* and *otherworldly* respectively (Weber & Parsons, 2001). Catherine Bell (1997) described the differences between these two terms:

> The otherworldly ascetic tries to repress personal desires and worldly involvement since they obstruct the dissociation from this life that the mystic sees as necessary for salvation. The otherworldly ascetic, however, does not try to forsake the world so much as gain mastery and control over it, usually beginning with control over the bodily and then the mental self… Inner-worldly mystics make no attempt to escape involvement in worldly affairs, but they often attempt to cultivate a type of indifference so as to experience an underlying unity with the whole. For inner-worldly ascetics, however, the focus is on attaining mastery and control over the worldliness (that is, the flaws or sins) within the human personality, with the expectation that the results of such mastery will be evidenced in this life in the human world. (p. 179)

For the dedicated ascetic, the goal of asceticism is to transcend ordinary reality. With this objective, fasting has been an essential ascetic tool that has been used in every major religion as an instrument with which to refine human nature and prepare for enlightenment.

Asceticism in Religious and Spiritual Traditions

In religious and spiritual traditions, fasting is usually practiced in conjunction with other ascetic activities. Virtually every major religion has engaged in asceticism in the form of fasting and other austerities, including ancient pagan religions, Judaism, Christianity, Islam, Hinduism, Buddhism, and Native American traditions.

In many of these traditions, asceticism has been practiced in their mystical branches (Ferguson, 1977; Spencer, 1963; Underhill, 2009). Mysticism has been defined as the knowledge and personal experience of states of consciousness, such as various levels of being beyond normal human perception, including communion with a supreme being (Underhill, 2011). According to George Robinson (2000),

> Mysticism is a highly sophisticated form of religious belief, often cerebral and almost always elitist in nature, but it also posits a level of direct and intuitive spirituality that transcends the intellect. Mysticism hinges on the notion that God is immanent—inherently present, dwelling within all creation—an idea that can take the form

> of pantheism, the belief that God is present in everything, or panentheism, that everything was created is *in God,* a more common notion in Jewish mysticism. Finally, mysticism generally involved a highly ritualized set of practices, often ascetic in nature, designed to bring the mystic closer to the Divine. (p. 362)

Most of the great world religions began with the teachings of mystics, including the Buddha, Jesus, Lao Tzu, Krishna, Mahavira, and Muhammad (Ferguson, 1977; Spencer, 1963; Underhill, 2008). Almost every religious tradition has texts that describe mystical experiences, usually in conjunction with some ascetical activity, such as fasting.

According to Evelyn Underhill (2008), author of *Practical Mysticism,* the terms *enlightenment* and *illumination* have been used to describe mystical phenomenon in a variety of religious and spiritual traditions. A chief aim of practicing asceticism in mysticism is to achieve enlightenment, and this has been done with fasting more than any other activity (Hunt, 2010).

Varieties of Monasticism

Fasting, and other ascetic practices, have been an essential feature of monasticism since its inception. Lucia Glahn (2010) said, “In the eyes of the founding fathers of monasticism, the search for God was quite impossible without fasting” (p. 206).

When discussing asceticism in different religious traditions, it can be useful to distinguish between the ascetic practices in monasticism and among laity. In some religious traditions, monastic asceticism is more severe, but this is not always the case. For example, many of the Catholic saints were laity when they first partook in extreme fasting and other forms of severe self-mortification (Brumberg, 1988). In contrast, many monks have lived a normal life before deciding to renunciate and adopt an eremitic or austere lifestyle (Kaelber, 2005). Across many cultures, there have been individuals who lived on the edge of inhabited places, remaining in the world while striving to form a union with God through asceticism (Derrett, 1995; Lawrence, 2001). Because of the complex nature of human development, the line between monastic and lay asceticism is not always easily drawn.

There are at least four types of monastic life styles: 1) eremitism (living in seclusion), 2) wilderness communities, 3) monasteries, and 4) priestly training seminaries. The more dedicated ascetical and hermetic lifestyle has historically been associated with monks, yogis, and priests, but some laypeople also have chosen to lead an ascetic life. The Buddha, Jesus, Mahavira, Mohandas Gandhi, and Saints Francis of Assisi and Anthony of the Desert were all ascetics who chose to live a mendicant life (Alder, 2000; Brown & Boersema, 2006; Drury, 2006; Keim, 2010/1876; Osho, 1973).

In Christianity, monasticism provided the origins of the words *monk* and *monastery.* The word *monk* originated from the Greek word *monos,* which means "to be alone" (Corbishley, 2004, p. 38). The word *nun* comes from the Greek word *nonna,* and was originally used to signify a virgin (Knight, 1846, p. 365). Those who chose the monastic life have been called *monks* (for men) and *nuns* (for women). In most traditions, monks and nuns have either lived alone or in monastic communities (Dunn, 2003).

Monks have been around long before monasteries, originally living alone in the wilderness. Over time, some came together to form monastic centers, while continuing to observe an ascetic lifestyle (Rowling, 1968). These two distinctly different approaches to monasticism became known as *ermetic,* for the monk who lived alone, and *coenobitic,* for the monks who live within a community or monastery (McGuckin, 2011). Monastic lifestyles have also been called *solitary* and *communal* (Beliaev, 2000). In contemporary times, some monks still live alone in the wilderness and others live in monastic institutions. While some monasteries can be found in remote locations, others are located in busy metropolises.

Asceticism in Christianity

The word *asceticism* comes from the Greek *askesis* which means practice, bodily exercises, and more specifically, athletic training (Kaelber, 2005). The early Christians adopted the word to signify the practice of the spiritual exercises performed for the purpose of acquiring the habits of virtue (McNamara, 1988). The term *ascetical theology,* used primarily in Catholic theology, is the study of spiritual teachings that are found in Christian scripture that instructs the faithful on how to more perfectly follow Christ and attain Christian perfection through asceticism (Devine, 2009; Thornton, 1986).

Jesus engaged in a variety of ascetic activities: his 40-day fast in the wilderness, his abstinence from marriage, and his voluntary poverty. Jesus encouraged fasting among his disciples, many of whom practiced rigorous fasting. F. Home Dudden (1906) said, “his immediate disciples were addicted to fasting, presumably with his sanction” (p. 128). Jesus said of fasting,

> When you fast, do not look gloomy like the hypocrites. They neglect their appearance, so that they may appear to others to be fasting. Amen, I say to you, they have received their reward. But when you fast, anoint your head and wash your face, so you may not appear to be fasting, except to your Father who is hidden. And your Father who sees what is hidden will repay you. (Matthew 6: 16-18 New American Bible)

In Christianity, asceticism has been practiced in the mystical traditions of Catholic spirituality, the Quaker tradition, Christian mysticism, and Gnosticism with the goals of attaining enlightenment, receiving spiritual visions, and creating a union with God (Ferguson, 1977; King, 2004; Louth, 2007; Spencer, 1963; Steven, 2001; Zaehner, 1957).

The religious groups within Christianity each have differing views on asceticism. The Catholic Church, the Eastern Orthodox churches, Oriental Orthodox churches, and some Anglican churches, all practice asceticism, while most of the Protestant denominations tend to view it as unnecessary (Ferguson, 1999). One Christian context of asceticism is Lent, the period between Ash Wednesday and Good Friday leading up to Easter (Thurston, 1910). During this season, Catholics practice prayer and fasting, especially on Fridays and special holy days. Many other Christians practice traditional Lenten disciplines as well. The more extreme version of Lenten asceticism is fasting for 40 days, a practice demonstrated by numerous Catholic saints (Bell, 1985; Bynum, 1987; Vandereycken & van Deth, 1994).

In Catholicism, the flesh has been depicted as oppositional to the spirit, and ascetic activities, such as fasting, have been used in penance for bodily transgressions. Scholars have been quick to point out that such external penances—even in the saints—can have questionable motives (Bell, 1985; Bynum, 1987; Vandereycken & van Deth, 1994). Saint Jerome, whose austerity made him an authority on this point, wrote the following:

> Be on your guard when you begin to mortify your body by abstinence and fasting, lest you imagine yourself to be perfect and a saint; for perfection does not consist in this virtue. It is only a help; a disposition; a means though a fitting one, for the attainment of true perfection. (as cited in Ryan, 2009, p. 24)

Saint Jerome seemed to suggest that the intention of asceticism is to attain true perfection and the act of penance is merely a supplementary virtue. Towards this goal, asceticism is closely related to the Christian concept of chastity and renunciation (Boyarin, 1995; Rhee, 2005). It is worth noting that Saint Jerome frequently lauded the virtues of fasting and said, “Let your companion be pale and thin with daily fast” (as cited in Beaumont, 1991, p. 9).

The motives of some of the Catholic saints, most notably Saints Catherine of Siena and Clare of Assisi, caused great trouble for ecclesiastic authorities. In response to the saint’s excessive fasting and other acts of self-mortification, the Catholic Church cautioned them to guard against the sin of pride and any self-satisfaction they might gain from the pain of their heroics (Prose, 2003).

In the Christian Gospels, the practice of asceticism is repeatedly depicted, often in the form of fasting. John the Baptist is portrayed as a desert ascetic, “John was clothed in camel’s hair, with a leather belt around his waist. He fed on locusts and wild honey” (Mark 1:6 New American Bible). There are numerous references to fasting in the Bible, such as Jesus spending 40 days fasting in the desert prior to beginning his ministry (Franklin, 2008). Additional scriptural examples of asceticism are found in stories of Jesus, the 12 Apostles, and Saint Paul.

Christian authors of late antiquity such as Origen, John Chrysostom, and Saints Jerome, Ignatius, and Augustine interpreted passages in the Bible with an emphasis on ascetic behavior (Ehrman & Jacobs, 2003). In addition to interpreting asceticism in the Christian Gospels, these scholars noted the ascetic practices of the ancient Jewish sect of the Essenes as found in the Dead Sea Scrolls (Wilson, 2005). Other Christian practitioners of asceticism included Saints Simeon Stylites, David of Wales, and Francis of Assisi, all of whom fasted extensively (Doran, 1989; Jorgensen & O’Conor Sloane, 1912; Wyn Evans &

Wooding, 2007). Saint Francis of Assisi was a particularly enthusiastic faster. In describing Saint Francis' fasting activities, Johannes Jorgensen said,

> Besides this fast in honor of Saint Michael, and the lenten fast, and the fast prescribed in the Rule of the Order from All Saints' Day to Christmas, Francis appears to have fasted forty days in honor of Sts. Peter and Paul, ending with their feast-day, June 29, and finally in honor of Mary from June 29 to August 15. (Jorgensen & O'Conor Sloane, 1912, p. 291)

Most of the negative opinions on asceticism are due to the radical practices of the Catholic saints and oriental fanatics. Both groups spent long periods of time engaged in a variety of extreme ascetic behaviors, including extended fasting (Lansford, 2004; Wilson, 2004).

Flagellation in Christianity

In the Catholic Church, opinions on asceticism have widely varied. Opponents of asceticism have cited two main types of asceticism in their arguments; fasting and self-flagellation. The two are seen as closely related primarily because they both act upon the body with varying degrees of severity (Bynum, 1987; Largier & Harman, 2007; von Corvin, 2003).

Self-flagellation is the deliberate act of inflicting pain on oneself, usually with a whip on the back, although other methods are sometimes used (Matteoli, 2009). Adherents practice it both in private and in groups as a public display. Almost all flagellants partake in fasting, especially in preparation for self-flagellation (Cooper, 1869).

In Christianity, self-flagellation mimics the flagellation of Christ, an episode in the Passion of Christ prior to Jesus' crucifixion (Bell, 1987). The practice of mortification of the flesh for religious purposes was utilized by Christians throughout most of Christian history, especially in Catholic monasteries and convents (Rader, 1983).

Flagellantism never had a central doctrine or overall leaders, but enthusiasm for the movement occurred across Europe beginning in the thirteenth century (Schaff, Jackson, & Schaff, 1894). Proponents of the movement maintained that flagellation was of equal virtue with baptism and the sacrament.

The first recorded incident of group flagellation was in Perugia in 1259, the year after severe crop damage created a famine throughout Europe (Cross & Livingstone, 1997). During the Perugia incidence, stories recounted how thousands of citizens gathered in great processions, singing and holding crosses and banners while marching throughout the city whipping themselves (Toke, 1909). Afterward, public acts of self-flagellation spread across Northern Italy and then into Austria.

The peak of the flagellants' activity occurred during the Black Death, which began around 1347 (Cohn, 1970). With the exception of England, flagellant groups arose spontaneously across Northern and Central Europe. In 1349, the activities of one group of flaggelants, the Brothers of the Cross, was well-documented. The Brothers of the Cross marched across Germany in thirty-three and a half days, with each day symbolizing one year of Jesus' life on earth (Schaff, 1910). The group, wearing white robes and singing hymns, marched on every day of the week except Sundays. They would periodically stop and establish a camp in a field near a town, upon which they would descend twice daily. When they were in the town, the group would hold a ritual that culminated with whipping themselves until they bled (Harris, 1989). The flagellants frequently undertook these types of militant pilgrimages and were eventually condemned by the Catholic Church as heretical.

In 1261, Pope Alexander IV prohibited self-flagellation, and in 1349 Pope Clement VI followed suit (Matteoli, 2009). Regardless of Papal edicts, local clergy endorsed the practice, and it has remained in practice to this day (Bazell, 1995). To the surprise of many, self-flagellation eventually became accepted by the Catholic Church. According to Richard L. Matteoli (2009),

> Within two centuries the official prohibition was turned around and self-flagellation was officially accepted. In 1508 community flagellation was given a *Bull of Benefaction and Indulgence* by Pope Julian II and in 1536 Pope Paul III gave flagellation his blessing. (p. 19)

A number of Catholic religious orders have continued the practice of self-flagellation, most notably the Carmelites and Opus dei, as well as other groups.

The Carmelites. According to hagiographers, the origin of the Carmelites is uncertain, but they are thought to have been founded in the twelfth century on Mount Carmel by a group of hermetic ascetics (Berlin & Grossman, 2011). The Carmelites were known for wearing habits of rough, raw wool that made up a tunic, scapular, and hood. For their cincture, they used a leather belt in imitation of Elijah and John the Baptist (Payne & Zagano, 2011). The Carmelites fasted for eight months of the year and slept on straw beds. They never ate meat except in cases of sickness, or when a physician prescribed it (American Almanac Collection, 1839). Some Carmelite orders were known for more extreme forms of asceticism. For example, in the 1500s, one Carmelite nun, Caterina of Cardona, used chains and hooks in self-mortification (Matteoli, 2009).

In the sixteenth century, Teresa of Avila became a reformer of the Carmelite Order and is considered to be, along with John of the Cross, a founder of the Discalced Carmelites (Bossy, 1985). Teresa restored the order to its primitive disciplines of wearing rags, sleeping on straw, whipping themselves with scourges, and fasting (Kidder & Oppenheim, 2010). Following Teresa's example, self-flagellation and fasting became common practices among Carmelites.

Opus Dei. Opus Dei, is an organization of the Catholic Church that was founded in Spain in 1928 by the Catholic priest Saint Josemaría Escrivá. The majority of its members are lay people. As of 2010, members of the Prelature numbered 90,260 (Cheney, 2011). Members of Opus Dei practice self-flagellation using an instrument called a *discipline,* a cattail whip usually made of knotted cords, which is flung over the shoulders repeatedly during private prayer (Opus Dei, 2011). In addition, followers fast on the Catholic Church's prescribed days (Allen, 2007). According to Opus Dei doctrine, members are encouraged to ask clergy for permission to fast outside of this protocol.

Pope John Paul II was closely connected to Opus Dei and actively promoted and protected them. The elected Pope in 1978, Pope John Paul II, regularly practiced self-flagellation, beating himself with a belt and sleeping on a bare floor to bring himself closer to Christ (Oder & Gaeta, 2010). Pope John Paul II believed that fasting was a powerful force and said, "Jesus Himself has shown us by His own example that prayer and fasting are the first and most effective weapons against the forces of evil" (as cited in Hagedorn, 2009, p. 1).

Mother Teresa of Calcutta is another well-known Catholic figure who fasted frequently and self-flagellated (Baab, 2006; Gleissner, 2010). One of the forms of self-flagellation that Mother Teresa was known to use was a cilice, a small spiked chain worn around the thigh with the intention of inducing discomfort and pain as a sign of repentance and atonement (Allen, 2007). Based on analyses of art, clothing, and preserved skin imprint patterns at Çatalhõyuk in Turkey, there is evidence that the cilice predates written history (Hodder, 2006).

Modern flagellant groups still exist in Catholic countries, including Spain, Portuga, Italy, Mexico, and the U.S. (Matteoli, 2009; Occhiogrosso, 2005). The Legionnaires of Christ, a secretive, elite Catholic religious order which operates mainly amongst the rich, has considerable influence in Ireland, Mexico, and the U.S. (Coogan, 2002). The Legionnaires' routinely practice self-flagellation and extreme fasting.

Catholics are not alone in choosing to whip themselves for religious reasons. For example, some Shiite Muslims lash themselves until they bleed when marking the mourning period of *Ashura* (Ishaq, 1991).

A form of self-mutilation that is shared by Christians and Buddhists is self-disfigurement by women (Wilson, 1996). In Christian hagiography, there are stories about women who mutilated themselves to reduce their attractiveness and therefore to preserve their virginity. According to Liz Wilson, "Several cases involve the intentional loss of one or both eyes by a woman who wishes to avert the erotic gaze of an admirer or fiancé" (p. 169).

Asceticism in Christian Monasticism

Christian monasticism is thought to have begun in the third century in Egypt when Saint Anthony left civilization to live in the desert as a monk (Meyer, 1950; Smith, 1978). Saint Anthony chose to live as a hermit in a desert cave, where he spent most of his life (Cowan, 2006). He gradually gained followers who lived as hermits in close proximity to him (Chitty, 1966; Meyer, 1950). One of those followers was Paul the Hermit, who lived in solitude in a nearby cave (Lyster, 2008). Saints Anthony and Paul were part of a group that was called "the desert fathers," known for their hermetic lifestyle and devotion to fasting (Mahr, 2003, p. 253). According to Greg Mahr (2003), ‘Widely emulated, the desert fathers were also known as “athletes of God” because of their amazing capacities for fasting and prayer” (p. 253). Many of the desert monks ate only two days per week, eating only herbs, raw fruits, and raw vegetables (Glahn, 2010).

The Christian concept of monasticism developed in response to the desert fathers and others who lived a hermetic life in imitation of Jesus’ 40 days in the desert (Knowles, 1969). Both solitary and communal monasticism became popular and spread outside of Egypt, first to Palestine and the Judean Desert and then to Syria and North Africa.

In the early history of the Christian Church, monasticism was modeled after scriptural examples and ideals, including those in the Old Testament (Rubenson, 1995). Monasticism grew to be regulated by religious edicts, such as *The Rule of Saint Basil* and *The Rule of Saint Benedict,* documents which dictated the rules of Christian monastic life (Hunt, 2010).

Saint Basil the Great, born in 330, was a Greek bishop who was one of the most influential figures in the development of Eastern Christian monasticism (Bebis, 1997). Many of Saint Basil’s sermons focused on the power he perceived in fasting. He once said, “If all people followed the advice to fast, it would answer their questions and nothing would stop peace from reigning the world” (as cited in Glahn, 2010, p. 205). However, Saint Basil also believed that fasting could distract an individual from doing God’s work. According to *The Rule of Saint Basil,* he stressed that fasting and prayer should never interfere with a monastic’s work (Morison, 2012).

Numerous religious orders in Eastern Christianity came to bear Saint Basil’s name (Hildebrand, 2007). In the Roman Catholic Church, the Basilian Fathers, also known as The Congregation of Saint Basil, place great emphasis on *The Rule of Saint Basil* and his call for chastity, meditation, prayer, and fasting (Platt, 2005).

Saint Benedict of Nursia, born in 480, has been called the founder of Western Christian monasticism (Carletti, 2009). Born to an aristocratic family, Saint Benedict left when he was young in order to live in solitude in the Sabine mountains (Muller, 2010). Entrenched in the hermetic life, he fasted rigorously and spent long hours praying for others and communing with God (Butcher, 2012). After establishing a number of monastic orders and preaching the value of fasting, Saint Benedict declared, “Do not embrace soft living; love fasting” (Monaco & Hansen, 2001, p. 10). To this day, *The Rule of Saint Benedict* is the most common and influential rule that is used by monasteries and monks, more than 1,400 years after its writing. One such order, the Benedictine Monks, remain strong proponents of fasting according to Saint Benedict’s edicts (Glahn, 2010; Muller, 2010).

Large monastic centers exist today in Ethiopia, Georgia, Greece, Russia, Romania, Serbia, the Holy Land, and elsewhere in the orthodox world (Hart & Olivera, 2006). After the fall of the Iron Curtain in 1989, a renaissance of monasticism began across Europe and many previously empty monastic communities reopened, with some of them accommodating tourists (Barish, 2006; Di Duca, 2011; Kohn & Starnes, 2011; Norwich, 2011; Pettersen & Baker, 2010). For example, the Monastic State of Mount Athos in Greece, an island that is considered to be the spiritual center of monasticism for the Eastern Orthodox Church, accepts visitors for tours, but only males are allowed. The monks on Mount Athos have three fasting days per week: Mondays, Wednesdays, and Fridays (Pennington, 2003). The Mount Athos monks, who grow all their own food and occasionally catch fish, are pescatarians, and no meat is allowed on the island.

In Christian monastic traditions, monks often spend long hours fasting, praying, and singing. A hymn that is sung by some monks during Lent contains the lyrics, “Through abstinence, what is tired and weak and sick becomes strong” (as cited in Muller, 2010, p. 11).

In Christianity, nuns—and other female figures—had an especially close relationship with fasting. In chapter 11, the stories of some of the best-known female saints and mystics detail the role that asceticism and fasting played in the development of Catholicism. The majority of these women were nuns who voluntarily lived in poverty and abstinence. A great many died due to starvation after prolonged fasting, including Saints Catherine of Siena (Bynum, 1987), Columba of Rieti (Bell, 1985), and Margaret of Cortona (Lelwica, 2002). Numerous others were said to have died from ill health brought on by excessive fasting, including Saints Clare of Assisi (O’Malley, 2000), Elizabeth of Hungary (Farmer, 1978), and Margaret of Hungary (Starr, 2007).

The extreme asceticism of these women frequently crossed the line into masochism as they subjected themselves to self-harm as well as injury at the hands of others. For example, Saint Catherine of Siena drank the pus from a patient's open sores and enjoyed it (Bynum, 1987). Saint Veronica Giuliani allowed people to kick her in the face, and she claimed that demons knocked her off of ladders and bit her (Hyman, 1999). Saint Francesca Romana burned her genitals with boiling pork fat (Bell, 1985). In addition to these acts, all three women fasted to the point of emaciation.

Although literary discussions of excessive fasting in Christianity are usually focused on the female saints of the Middle Ages, this behavior continued into the 1900s. For example, Saint Gemma Galgani, who died in the early 1900s, was given to flamboyant displays of suffering, including public presentations of severe emaciation due to extreme fasting, and the exhibition of torn and bleeding flesh (Bell, 1985). Galgani's zealous ascetical activities were said to have influenced case studies on hysterics by Josef Breuer and Sigmund Freud (Bell, 1985).

In modern times, nuns live in a variety of settings, all of which involve a commitment to some level of asceticism. This includes celibacy, vows of silence, and varying degrees of fasting. In contemporary Christian nunneries, certain orders require more fasting than others, although some degree of fasting is required across all of these traditions.

Asceticism in Judaism

The history of Jewish asceticism dates back thousands of years to the nazirite and wilderness traditions that evolved out of living in the desert (Gluckich, 2001; Robinson, 2000). The term *nazirite* is derived from the Hebrew word *nazir* and means "consecrated" or "separated" (Hastings, Selbie, & Lambert, 1918, p. 80). One of the best known nazirs was Samson, who was dedicated from birth as a nazir, a distinction that, among other things, prohibited him from drinking wine and cutting his hair (Evans, 2009). As part of their ascetic practices, Nazirite Jews fasted and abstained from consuming grape products, getting haircuts, and having contact with the dead (Chepy, 2005).

The Jewish prophets and their disciples were extreme ascetics, partaking in long periods of fasting and hermetic living conditions (Telushkin, 1994). Moses fasted for 40 days on Mount Sinai (Exodus 24:18), Elijah spent 40 days fasting and walking to Mount Horeb (1 Kings

19:8), Jeremiah never married (Jeremiah 16:2), Isaiah went naked for three years (Isaiah 20:3), and Ezekiel laid on his side for 390 days eating only bread (Ezekiel 4:9) (New International Version).

In the first century, there were three main groups of Jewish ascetics (Dudden, 1906). The first were the Essenes, who lived together in monastic communities and practiced voluntary poverty, meditation, and vegetarianism. The Essenes routinely fasted, sometimes for as long as 40 days (Pinkham, 1997). The second group were the hermit ascetics who lived alone in the wilderness, wore clothes made of leaves, bathed in cold water, were vegan, and fasted for long periods. The last group were the pious Jews who cultivated a milder type of asceticism, mostly in the form of fasting.

Self-mortification and fasting at regular intervals were common among Jewish mystics (Schindler, 2000). The Jewish mystical doctrines of Kabbalah practiced asceticism with the goal of renunciation of the ego (Elior, 2007; Wigoder, Skolnick, & Himelstein, 2002). Around 70 CE, Simeon ben Yochai, founder of the Kabbalah, used fasting combined with other ascetic practices (Baskin & Seeskin, 2010). For 12 years, Simeon ben Yochai and his son ate only carob pods while living in a cave and hiding from the Romans (Duke, 2007). Kabbalists, like other mystics, were concerned that the easy appeal of physical pleasures was a detriment to a spiritual life (Laitman, 2009). In renunciation of worldly ties, some Kabbalists would spend weeks at a time fasting (Kavka, 2004).

In Rabbinic culture, asceticism was at times advocated and at other times denounced (Schofer, 2003). For example, the rabbis of the Talmudic period discouraged asceticism, considering it a sin to deprive oneself of the gifts of life (Telushkin, 1994). During this same period, fasting was a common practice of the second temple and the Jewish text *The Fasting Obligations According to the Month of the Year* was written during this time period (Kavka, 2004; Lau, 2010). Furthermore, many of the rabbis of the Talmud are described as avid fasters (Diamond, 2003; Steinsaltz, 1996).

Judaism still embraces some types of asceticism, with the most common practice observing the prescribed fast on the Day of Atonement on Yom Kippur (Cole & Winkler, 1994; Werblowsky & Wigoder, 1997).

Asceticism in Judaic Monasticism

While Judaism has generally not encouraged the monastic ideals of celibacy, poverty, and isolation, there were exceptions. The Essenes, who flourished from the second century BCE to the first century CE, had orders in various cities and congregated in a communal lifestyle that was dedicated to asceticism, voluntary poverty, daily immersion, and abstinence from worldly pleasures (Bruce, 1956; Fracchia, 1979; Meurois-Givaudan & Meurois-Givaudan, 1992; Wilson, 2005). The priests of the sect of the Essenes practiced celibacy and adhered to a rigid interpretation of the priestly purification laws, dietary restrictions, and fasting (Armstrong, 1994).

Asceticism in Islamic Religions

Asceticism has played a major role in Islamic religions, especially in the form of fasting (Nanji, 1996). According to tradition, the Prophet Muhammad frequently fasted and called for other Muslims to follow suit (Glasse, 2001).

Early Muslim ascetics focused on introspection and maintained a strict control over their personal life and behavior. Their practices included fasting, wearing light clothing in winter, and withdrawing from the world (Drury, 2006).

The major ascetic feature of the Islamic tradition is the practice of fasting during Ramadan, during the ninth month of the Islamic calendar (Lazich, 2004). The word “Ramadan” means “parched thirst” (Cohen, 2011). In the tradition of Ramadan, daytime fasting, known as *sawm,* is practiced by most Muslims (Armstrong, 1994). During the month of Ramadan, no Muslim is supposed to eat, drink, or engage in sexual activity during daylight hours (Chattopadhyay, 1993). The Ramadan fast is intended to be an act of deep personal worship during which time Muslims seek an enhanced communion with God (Ferguson, 1977). In addition to prayer and fasting during Ramadan, Muslims are encouraged to read the entire Qur’an and give up other daily activities (Leaman, 2006).

In Islamic mysticism, asceticism has been practiced in Sufism with the goals of attaining innate knowledge and creating a union with God (Nicholson, 2001; Spencer, 1963). Sufism is a mystical and ascetic movement that developed in Islam in the ninth century (Zaehner, 1957). Early Sufism focused on turning away from worldly life to concentrate on prayer and fasting (Bayman, 2001). By the middle of the ninth century, Sufi mysticism flourished, spreading from Baghdad to Persia, Pakistan, India, North Africa, and Spain (Armstrong, 1994; Hoffman, 1995; Malti-Douglas, 1995).

The Sufis have a word for asceticism, *zuhd,* which means doing-without (Gulen, 2006, p. 43). According to M. Fethullah Gulen, Sufis maintain that "Possessing worldly means or wealth is not contrary to asceticism—if the owner can control his or her possessions and is not over powered by them" (p. 43).

Asceticism in Indian Religions

Although asceticism and fasting are features of almost every religion, they have played a particularly prominent role in the three principle Indian religions: Hinduism, Buddhism, and Jainism, all of which originated in South Asia (Olivelle, 1995).

Hinduism has been called "the oldest of the world's living religions," but its exact origins are unknown (Sarma, 1996, p. 3). Historians trace its roots back to the Vedas, a prehistoric Indian religion discussed in the Sanskrit literature (Rosen, 2006). The Vedas, composed more than 3,000 years ago, prescribed fasting among other austerities.

Buddhism and Jainism each developed in India around the sixth century BCE (Rinehart, 2004). During this period, Buddhists, Jains, and Hindus shared many of the same religious philosophies. One common belief of all three religions was that suffering could be overcome through purification, often facilitated by fasting (Spencer, 1963). It was thought that liberation from suffering was achieved through asceticism and renunciation (Heehs, 2002). All three religions embrace this perspective, which is known as *moksha,* the release from the cycle of repeated death and reincarnation (Matthews, 2010, p. 74). According to David R. Kinsley (1982), the moksha tradition "teaches that man must never lose sight of his destiny, which is to transcend the world" (p. 97).

Asceticism in Hinduism

Much of Hinduism was developed from ancient social systems that were characterized by diversified pantheism (i.e. the caste system) and devotion to the Brahma, the creator-god of the Hindu trinity (Doniger O'Flaherty, 1990). The trinity consists of Brahma, Vishnu, and Shiva, who are regarded as the creator, the preserver, and the destroyer of the universe, respectively. In Brahminism, a Brahmin is a priest who considers fasting to be the path to purification (Doniger O’Flaherty, 1990).

Fasting, meditation, yoga, and other austerities were developed to assist in disengaging from the world of sensual desires and to realize the final goal of release. The goal of asceticism in Hinduism is to experience liberation from the cycles of karma, a process that governs the cycle of death and rebirth (Flood, 2005). In Hinduism, Jainism, and Buddhism, karma is accumulated based on a person’s words, thoughts, and actions (Tucker & Williams, 1998). To escape the cycle of life, death and rebirth, the individual must first exhaust his or her karma.

In Hinduism, the concept of the Eternal Way is central to the practice of asceticism (Fowler, 2002). Originally written in Sanskrit as *Sanatana Dharma,* the premise of the Eternal Way is the idea that certain spiritual principles hold forever true (Knapp, 2011, p. 4). These principles transcend man-made constructs and represent a pure science of consciousness (MacDonell, 2004; Monier-Williams, 1964). This consciousness is not merely that of the mind or the intellect, but of an extraordinary mental and spiritual state that exists within and beyond our physical existence (Knapp, 2006). According to Amit Goswami (2011), “In the olden days, perhaps the most effective means of production (and dissemination) of *supramental energy* were traveling monks called sadhus in India…” (p. 243). The sadhus have been called a “universal symbol of Hinduism” (Jaffrelot, 2010, p. 208).

Asceticism in Hindu Monasticism

The sadhus are the monks of India who are believed to be holy men dedicated to radical forms of self-denial (Rampuri, 2010). The particular types of asceticism that are practiced by sadhus vary from sect to sect and from sadhu to sadhu (Hausner, 2007). Sadhus are considered sanyasi, or renunciates, who have left behind all material and sexual attachments, and they live in caves, forests, and temples all over India and Nepal (Miller & Wertz, 1976).

According to Gavin D. Flood (1996), the Sanskrit terms *sadhu* (good man) and *sadhvi* (good woman) refer to renouncers who have chosen to live a life apart from—or on the edges of—society to focus on their own spiritual practice (p. 92).

Sadhus engage in a wide variety of religious and ascetic practices, especially fasting. Some practice extreme asceticism while others focus on praying, chanting, meditating, and relatively shorter periods of fasting (Hausner, 2007).

There are four to five million sadhus in India today (Hartsuiker, 1993). Widely respected for their devoutness, Hindus believe that the austere practices of the sadhus help to burn off their karma and that of the community around them (Rampuri, 2010). Because they are seen as benefiting society, sadhus are supported by donations from people in the areas where they live. However, reverence of sadhus is by no means universal. Sadhus often have been viewed with a certain degree of suspicion, particularly amongst the urban populations of India (Levy, 2010). In modern times, posing as a sadhu can be a means of acquiring income for non-devout beggars, especially in popular pilgrimage cities.

The Indian peoples' deep respect for the sadhus is based on the belief that life is divided into four phases. These phases are: 1) the student, 2) the housekeeper, 3) the hermit, and 4) the wanderer (Tilak, 1989). These are seen as necessary steps on the path of purification of the soul and achievement of nirvana, a state in which a person is free from suffering and the cycle of rebirth. The sadhus are seen as having the characteristics of the latter two phases because they have given up material goods in favor of living a monastic life. Adopting the fourth phase in life generally is not considered to be a practical option for most Hindus, especially women (Traill, 1899).

There have been relatively few female ascetics (sadhvis) in Hinduism (Denton, 2004). According to Dolf Hartsuiker (2011), sadhvis have been around since the twelfth century:

> In contrast with the many young male sadhus, a beautiful young woman is but rarely seen in the brotherhood. About ten percent of sadhus are women, called sadhvis, but most of them are old, having become sadhvi after they were widowed. 1)

The lives of sadhus in contemporary India vary tremendously. Some sadhus live in ashrams and temples in the midst of major urban centers, while others live in huts on the edges of villages or in caves in remote mountain areas (Hausner, 2007). Wandering sadhus have lives of perpetual pilgrimage, moving without ceasing from one town or holy place to another (Gross, 1992). Some sadhus live alone or with one or two disciples, while others live in large, communal institutions. For some sadhus, the brotherhood or sisterhood of other ascetics is very important (Hartsuiker, 1993).

The rigor of the spiritual practices in which sadhus engage in varies. Apart from the few that engage in the most dramatic austerities—standing on one leg or remaining silent for years—most sadhus engage in some form of religious practice, such as devotional worship, hatha yoga, and fasting (Osho, 1973).

In addition to fasting for spiritual reasons, sadhus have partaken in hunger strikes (Jaffrelot, 2010). One well-known example occurred in December of 1992 when 70 sadhus went on a hunger strike to protest the government's interference of darshan (Swaminath, 1992). Darshan (also called darsana) is a Sanskrit term that relates to visions of the divine in Hindu worship (Jaffrelot, 2010). During darshan, devotees receive blessings either in the temple or from a saintly person, such as a sadhu (Eck, 1998). Historically, the darshan was given by saints and yogis who came out of their Himalayan caves once every 12 years in order to bless the people (Eck, 1998).

In addition to hunger striking in groups, individual sadhus have also undertaken hunger strikes. For example, sadhu Swami Nigamanand died in 2011 after fasting for 115 days in protest of illegal mining in Haridwar (NDTV, 2011).

Asceticism in Jainism

Jainism is an especially ascetic religion originating in prehistory India (Dundas, 2002). In a similar manner as Hinduism, Jainism encourages fasting, yoga, meditation in difficult postures, and other austerities.

The earliest historical evidence of Jainism was around 850 BCE when Parsvanatha gathered 16,000 monks, 38,000 nuns, 164,000 male lay disciples, and 327,000 female lay disciples to live together in one community (Jacobi, 1884). Parsvanatha advocated long periods of fasting and he attained moksha after undergoing rigorous fasting (Jain, 1975).

Around 500 BCE, Mahavira developed four similar orders that were patterned after Parsvanatha, consisting of monks, nuns, laymen, and other community members (Shah, 1998). Mahavira, a contemporary of the Buddha, emphasized nonviolence, celibacy, speaking the truth, refraining from stealing, and giving up material belongings (Chapple, 2010; Wiley, 2004). Mahavira frequently went for extended periods of time without sleep or food (Brodd, 2009). When he was not fasting, he ate only small amounts of food that he had begged for.

The *Kalpa Sutra,* a Jain text that contains the biographies of the Jain Tirthankaras, documented the ascetic practices of Parsvanatha and Mahavira. In Jainism, a Tirthankara is a savior who has succeeded in crossing over life's stream of rebirths and has made a path for others to follow. When Parsvanatha was 30, he renounced the world and became an ascetic. As a regular practice, he fasted in accordance with the lunar cycles. According to Hermann Jacobi (1884), after one dry fast of three-and-a-half days, Parsvanatha "put on a divine robe, and together with three hundred men he tore out his hair, and leaving the house entered the state of houselessness" (p. 273).

Mahavira was also a fervent ascetic. At the age of 30, he donated all his personal possessions to the poor and left his home on a 12-year search for the truth. He wandered barefoot and naked through forests where he spent long periods alone meditating and fasting (Jacobi, 1884). One section of the *Kalpa Sutra* described Mahavira's asceticism as follows:

> The Venerable Ascetic Mahavira for a year and a month wore clothes; after that time he walked about naked, and accepted the alms in the hollow of his hand. For more than twelve years the Venerable Ascetic Mahivira neglected his body and abandoned the care of it; he with equanimity bore, underwent, and suffered all pleasant or unpleasant occurrences arising from divine powers, men, or animals. (as cited in Heehs, 2002, p. 94)

Parsvanatha and Mahavira both encouraged asceticism among the monastic orders and worked to develop a relationship between monastics and laity, a dynamic that still persists in modern times. According to Natubhai Shah, (1998), "Laypersons have a special reverence for the ascetics and are guided by them in matters pertaining to their spiritual welfare" (p. 39).

Jains follow a strict vegetarian diet that excludes root vegetables. Fasting is a routine feature of Jain asceticism, with fasts lasting for one or more days, and often up to one month (Laidlaw, 2005). At the end of their lives, some Jains choose to fast to their death in accordance with an ancient Jain tradition. This tradition is discussed in detail in chapter 10.

Asceticism in Jain Monasticism

In Jainism, asceticism is practiced as it pertains to the concept of moksha (Sribhashyam & Sheshadri, 2012; Tukol, 1978). Moksha is achieved by shedding karmas, which Jains consider a pollutant of the human soul.

Jainism prescribes an active method and a passive method for removing karmas that are accumulated by the soul. Examples of active asceticism in Jainism include meditation, solitude, dietary restrictions, and fasting (Jain, 2009). For these methods to be successful, a soul has to be completely passionless and without attachment. This can be achieved only by monks and nuns who take five specific vows: 1) nonviolence, 2) truth, 3) non-stealing, 4) non-possession, and 5) celibacy (Jaini, 1979). Those who have attained moksha are called siddhas, which means liberated and formless beings.

There are two main monastic sects in Jainism, Svetambara (translated as “white clad”) and Digambara (translated as “sky clad”), both of whom aspire to attain moksha (Verma, 2008, p. 18). The Svetambaras wear white clothes, whereas the Digambaras wear no clothes at all. Digambaras do not believe that women can achieve moksha (Streete, 1999).

In Jain monasticism, Jain muni (or simply *muni)* is the term that is often used for monks and nuns (Cort, 2001). Jain monks and nuns are ardent ascetics who travel barefoot from city to city, often crossing forests and deserts. To prevent developing an attachment to any particular location, Jain ascetics do not stay in one place for more than two months at a time. The exception to this occurs during the four months of the monsoon season when they continue to stay at a single place to avoid killing life forms that thrive during the rains (Vallely, 2002).

In some monastic traditions, Jain monks observe strict lifestyle requirements, such as nudity, self-mortification, and frequent periods of fasting (Goorjian, 2000). Jain monks may fast for months at a time, following the example of Mahavira, who fasted for over six months. Out of regard for their physical bodies, they avoid or limit taking any medicine or being hospitalized. Other austerities include meditating in a seated or standing position near river banks in the cold wind, or atop hills and mountains, especially at noon when the sun is at its fiercest (Rankin, 2006).

Almost completely without possessions, some Jain monastics own only unstitched white robes and a bowl that is used for collecting alms and eating. Jain monks and nuns also practice complete celibacy (Jacobi & Muller, 2001). Furthermore, they do not touch or share a sitting platform with a person of the opposite sex. Every day is spent either in the study of scriptures, in meditation, in teaching, or in fasting.

Asceticism in Buddhism

As with Hinduism and Jainism, the aim of Buddhist practice is to end the suffering of cyclical existence *(samsara)* through awakening the realization of true reality and achieving spiritual liberation *(nirvana)* (Keown, 2003). To achieve this, one must purify and train the mind and act according to the laws of karma.

The founder of Buddhism, Siddhartha Gautama (c. 563 to 483 BCE), was born into a royal and affluent family (Brazier, 2002). When Gautama became aware that the world was full of suffering, he renounced his privileged life, left his family, and joined a group of ascetics known as Sramanics who lived in the forest (Deegalle, 2000; Wilson, 2004). Indian ascetics of this period, such as the Sramanics, are described as partaking in the severest forms of asceticism, “He takes food once a day, or once every two days, or once every seven days… He wears coarse hempen cloths, discarded corpse cloths, discarded rags, or antelope hide, or bark garments” (Bhagat, 1976, p. 151). Other accounts describe them as “Fasting, sleeping on the ground… with matted hair and dirt” (Bronkhorst, 1993, p. 83).

Gautama connected with the Sramanics and mastered the radical ascetic regimen that they advocated to such an extent that he ate very little, fasted often, and shriveled to skin and bones (Gethin, 1998). While it is generally believed that the Buddha denounced extreme forms of physical asceticism, some scholars reject this notion (Gethin, 1998; Hellmiss & Kriegisch, 1999; Wilson, 2004). These historians have suggested that long after the Buddha’s death, his followers claimed that he denounced asceticism so that the public would look more favorably on

Buddhism (Wilson, 2004). In fact, the Buddha never envisioned that Buddhism would be a spiritual path for lay people. Instead he saw a monastic practice that enthusiastically embraced asceticism and fasting (Gethin, 1998; Spencer, 1963; Wilson, 2004). For example, in one conversation, the Buddha said that mindfulness, wisdom, and concentration are more easily achieved when the body is wasting (as cited in Wilson, 2003).

The two major schools of Buddhism, *Theravada* and *Mahayana,* are to be understood as different expressions of the same teaching of the historical Buddha. Theravada tends to be more ascetic in its orientation than Mahayana (Deegalle, 2000). The purpose of life for Theravadins is to become an *arhat,* a perfected saint who has achieved nirvana and therefore will not be reborn (Brassard, 2000). As a result, Theravadins tend to be more monastic than their Mahayanan counterparts.

In the Theravada tradition, it is considered highly unlikely or even impossible that laity can achieve nirvana (Trawick, 2007). Because Mahayanans disagree and believe laity can attain nirvana, their practices are less demanding and attract more lay people.

Within the context of Mahayana Buddhist traditions, asceticism has historically taken on mystical and esoteric meanings (Deegalle, 2000). In Buddhist mysticism, asceticism has been practiced in Shingon, Tibetan, and Zen traditions with the goal of attaining nirvana and creating a connection to the ultimate reality (Louth, 2007; Studstill, 2005; Suzuki, 2011; Underhill, 2008; Zaehner, 1957).

In undoubtedly the most severe form of Buddhist asceticism, Tibetan activists have taken part in self-immolation. Self-immolation is the act of setting oneself on fire, usually as an act of protest or for the purposes of martyrdom or suicide (Williams, 2009). In Buddhist teachings, self-immolation is referred to as a way of sacrificing oneself to the Buddha (Ardley, 2002). James A. Benn (2007) explained that, “It has become clear that for many monks and laypeople in Chinese history, self-immolation was a form of Buddhist practice that modelled and expressed a particular bodily or somatic path that led towards Buddhahood” (p. 99).

Self-immolation has been a centuries-long tradition in some cultures, while in modern times it has become a type of radical political protest. Between 2009 to 2012, 54 Tibetans, many of them Buddhist monks and nuns, set themselves on fire demanding Tibet’s freedom from Chinese rule and the return of His Holiness the Dalai Lama from exile (Phayul, 2012).

The twenty-third chapter of the Buddhist text the *Lotus Sutra* recounts the life story of the Bodhisattva Medicine King (Durt, 1998). In the sutra, the Medicine King demonstrates his selfless devotion to Buddha by setting his body on fire. The story has been cited as the main inspiration for Buddhist monks and nuns who have self-immolated (Benn, 2007).

Self-immolation is a form of *flesh offering,* a practice that occurs in almost every religion and spiritual practice (Durt, 1998). In the broadest definition, flesh offering can be a variety of self-mutilating or self-mortifying acts, such as body piercing, scarification, or fasting. In the more extreme examples of the practice, body parts are removed and offered to deities. A classic example of flesh offering in Buddhism is found in the *Lotus Sutra* which reads:

> Then I see bodhisattvas by whom
> Bodily flesh, hands and feet,
> Evens wives and children are presented
> In quest of the Unexcelled Path
> Again, I see bodhisattvas by whom
> Heads and eyes, torso and limbs

Are joyously presented
In quest of the Buddha’s wisdom.
(as cited in Durt, 1998, p. 57)

Other well-known Buddhist tales of flesh offering include the King of the Sibis, who cut off a piece of his own flesh the size of a dove to protect himself from a ferocious hawk, and the Prince Mahasattva, who jumped off of a cliff so a starving tigress and her cubs could eat his body (Durt, 1998). Numerous Buddhist texts discuss the voluntary sacrifice of a piece of flesh by a donor in order to heal a sick person (Durt, 1998). The stories often involved cannibalism with the sick person cooking and eating the flesh of the donor. In some stories, the Buddha appeared in a vision afterward and completely healed the wound of the donor.

Asceticism in Buddhist Monasticism

Since its inception, Buddhist monasticism has included ascetic practices (Carrithers, 1983). The Buddha founded the first order of Buddhist monastics, the Sangha, immediately after his enlightenment (Gombrich, 1988).

In Buddhism, a male monk is known as a *Bhikkhu* or *Bhiksu* and a female monastic (or nun) is called a *Bhikkhuni* (Roces & Edwards, 2010). Although Buddhism has always maintained that women are just as capable of attaining enlightenment as men, the canonical texts depict the Buddha as being reluctant to permit women to join the Sangha (Chodran, 1999). After the Buddha admitted women into the Sangha (under pressure from his aunt), he was reported to have said, “Because I have accepted women into the order, the Buddhadhamma will only last five hundred years” (as cited in Chodran, 1999, p. 21). The Buddha had a number of caveats with regard to allowing female monastics, all of which clearly stated that monks should always have precedence over nuns (Chodran, 1999).

In the first few centuries that followed the Buddha’s death, Buddhist monks were known as wanderers who lived in caves and forests (Kinnard, 2006). They often stayed in close proximity to town so that food and other goods were readily available. This particular division of Buddhist monasticism, known as “forest monks,” is still in practice today (Kinnard, 2006, p. 26).

Buddhist monasticism made a radical departure from austerity during the fifth and sixth centuries when elaborate monasteries were built in India, some of which housed up to 10,000 monks (Kinnard, 2006). As Indian leaders began patronizing Hinduism, it became increasingly difficult for them to administer to the needs of the large Buddhist monasteries. By the eighth century, Buddhist monks, dissatisfied with these developments, abandoned the monasteries for a more austere life and moved back into forests and jungles to live in isolation (Kinnard, 2006). In the common era, there have been many lineages of Buddhist monastics. For example, in Tibet, a group of Buddhist monks that are called the Dalai Lamas, ruled the country from the sixteenth to the middle of the nineteenth centuries (Dunn, 2003).

The life of Buddhist monks in modern times is generally one of self-discipline with varying degrees of ascetical activities. For some, extreme asceticism is forbidden (Ling, 1972). In this context, the definition of “extreme” is largely subjective. For example, some of the more moderate monastic ascetic practices in Buddhism include wearing patched robes, fasting, eating restricted diets (such as vegetarianism), living in certain areas outdoors (such as forests, caves, or graveyards), and sleeping in a seated position (Ling, 1972, p. 30). Theravada Buddhists traditionally fast every day from noon until sunrise the following day, a practice that was most likely adopted from Taoism (Rogers, 2004).

Certain branches of Buddhist monasticism perform more extreme asceticism. Two Buddhist schools that are practiced in Japan, Tendai and Shingon, have severe ascetic trainings. Fasting centers are currently part of this tradition, and attendees regularly undergo a 9-day fast without food, water, sleep, or rest (Deegalle, 2000). The purpose of this ritual is to bring the participant face to face with death. At one point, it was shortened from ten days to nine days because too many people were dying at these retreats.

In the Shingon tradition, monks would fast to death by drinking only water or by reducing their food intake to flowers (Kidder, 2000). This was seen as a method of gaining spiritual power and guaranteeing entry into nirvana with the Buddha. The mummified bodies of the monks who died during this practice were preserved and held in several Buddhist temples throughout northern Japan.

The medieval Buddhist monastics in China were particularly self-mortifying, having partaken in acts such as long periods of fasting, burning off fingers, and copying scriptures in blood (Kieschnick, 2010). According to Paul Williams (2009), “Cases of complete self-immolation in Chinese Buddhism are by no means infrequent, and it is clear that it was sometimes undertaken by practitioners as the culmination of a lifetime of serious and devoted Buddhist practice” (p. 161). Buddhist monks and nuns have continued the practice of complete self-immolation into the twenty-first century (Wong & Olesen, 2011).

The main goal of asceticism in Buddhism monasticism is renunciation of the world, although this does not usually occur in isolation (Suzuki, 2007). In stark contrast to the Hindu system of the four phases of life in which renunciation is relegated to the end of life, Buddhists insist that as soon as an individual recognizes that the world is full of suffering, he or she should give up the worldly life and join a monastery (Cook, 2010). There, in the company of other monks or nuns, a regulated life of study, meditation, and self-discipline can be pursued (Dutt, 1962).

For monks who follow the teachings of the Buddha, certain acts of asceticism (such as fasting) are moral, ethical, prudent, and self-imposed (Rogers, 2004). All Buddhist monks follow a code of discipline, and—from the beginning—the Buddha prohibited criminals and debtors from becoming monastics (Thompson, 2006). Additionally, he also set rules and principles that governed the communal life. For example, Theravada Buddhist monks are bound by 227 rules, Tibetan Buddhist monks by 258 rules, and Japanese Buddhist monks by 250 rules (Thompson, 2006). Violators of the rules were to engage in specific austerities as a way of giving penance.

The Buddha recommended a number of ascetic practices that are called the *dhutangas* (Gombrich, 1988). These practices are intended to prepare and to help the seeker eliminate all forms of attachment. The dhutangas (known in *Thai* as *tudong)* are a list of 13 austerities, or ascetic practices that are most commonly observed by the forest monastics of the Theravada tradition (Wijayaratna, Grangier, & Collins, 1990).

All forest monks are to observe at least one of the dhutanga austerities (Thera, 1998). The dhutangas are intended to deepen the monks’ practice of meditation and to assist the monks in living the holy life (Kinnard, 2006). The dhutangas help the practitioner to develop detachment from material things, including the body (Taylor, 2008). The following are descriptions of the 13 dhutanga practices of austerity:

1. PamsuI was a little irritated and depressed for the first couple days, but after that I felt calmer and happier (Q9).kula (abandoned robes) is using any discarded cloth that is found on the road as material for making robes.
2. Tecivarika (three robes) is wearing the three robes of a monk as garments.
3. Pindapata (begged food) is eating only what one gains during begging, whether it be a little, a lot, or nothing at all.
4. Sapadanacarika (regular alms round): If good-tasting food is obtained from a particular house on alms round, that house is avoided in the future.
5. Ekasanika (one eating) is eating in only one place; not eating a little in one spot and then eating more in another.
6. Pattapindika (measured food) is eating only a certain amount of food.
7. Khalupacchabhattika (no food after commencement) is not accepting food after the start of a meal.
8. Arannika (dwelling in a peaceful place) is not living in a village or a noisy temple in order to support meditation.
9. Rukkhamula (dwelling under a tree) is living under a tree, not under a roof.
10. Abbhokasika (dwelling in a dewy place) is living neither under a roof nor a tree, but in the open.
11. Susanika (dwelling among the graves) is living in a cemetery or places where ghosts or malevolent spirits are known to inhabit.
12. Yathasantatika (any chanced upon place) is staying wherever one is at the end of a day’s wandering, as long as it is safe.
13. Nesajjika (always sitting and not lying down) is sleeping propped against a wall or in a meditation posture, not sleeping stretched out. (Gombrich, 1988)

Meditation in darkness is practiced by monks in all Buddhist countries (Lowenthal, 2003). In Burma, special rooms are built in the earth for this purpose. While the Burmese Buddhist monks only spend a few hours at a time there, some Tibetan ascetics have buried themselves for years—even until death—in such grave-like dwellings (Thurman, 1995).

In contemporary Buddhism, some laity may be unaware of Buddhism's rich ascetical history and current ascetic practices. Modern Buddhists may not realize that when they meditate or fast by skipping a meal, they are actually performing ascetic acts. This is unfortunate because having a conscious knowledge of the power of one's actions only serves to enrich such practices.

Asceticism in Taoism

There is a fair amount of dissension as to the origins of Taoism. While some scholars consider Lao Tzu to be the father of Taoism (Kaltenmark, 1964), others claim that its beginning cannot be attributed to a single founder (Eskildsen, 1998). In either case, Lao Tzu was a principle Taoist figure who lived in the fifth century BCE (Kaltenmark, 1964). Some historians consider Lao Tzu to be a mythical figure, fashioned after a number of historical figures (Kohn, 2004). Lao Tzu is said to have authored the Tao Te Ching, the fundamental text of Taoism. As a philosopher and devoted ascetic, Lao Tzu urged his followers to live in austerity among nature (Sunoo, 1985).

Other theologians claim that Taoism began during the Ch'in dynasty (221 to 207 BCE), citing the alchemic practices of Taoist priests, such as the mixing of elixirs, acting as spirit mediums, and the ability to levitate (Edwards, 2001).

During the first few centuries of the common era, Taoist ascetics practiced a variety of methods including self-imposed poverty, wilderness seclusion, sleep-avoidance, celibacy, and fasting (Eskildsen, 1998). According to Livia Kohn (2010), "Taoist immortals are well known for this rejection of worldly life, and famous for their unkempt appearance and easy communion with nature" (p. 113). Some scholars have noted that the severity of Taoist asceticism equaled or surpassed that of other religious and spiritual traditions (Eskildsen, 1998). This was in spite of the fact that Taoists did not engage in bodily mortifications such as self-flagellation and self-mutilation. It is worth noting that some ancient Chinese texts, such as the *Yuding jing* and *Sandong zhuang,* glorify the act of fasting to death (Eskildsen, 1998).

According to Stephen Eskildsen (1998), the chief objectives of Taoist asceticism were longevity and transcendence. To achieve this, the tradition called for extensive fasting combined with other activities, such as meditation and arduous breathing exercises (Kohn, 2010). According to Eskildsen (1998), “One of the most salient features of early Taoist asceticism was the great emphasis in fasting and the amazing variety of techniques devised to suppress hunger” (p. 1).

In contemporary Taoism, asceticism remains an important aspect of their practice (Eskildsen, 1998). Taoist ascetics are found in religious sects, the martial arts, and traditional Chinese medicine (Ming-Dao, 1993; Olson, 2002). However, there are widely differing opinions among practicing Taoists as to the value of asceticism. With regard to fasting, some followers practice it for long periods (Reid, 1989), whereas others do not believe in its value (Ellingson & Green, 2002).

Asceticism in Taoist Monasticism

The origins of Taoist monasticism are obscure. Some scholars trace its beginnings to the third century (Lewis, 2007), while others suggest it started in the fifth or sixth centuries (Eskildsen, 1998; Kohn, 2007). However, most agree that Taoist monasticism blossomed when Taoist ascetics began emulating Buddhist monasticism (Eskildsen, 1998; Kohn, 2007; Lewis, 2007). Modeling Buddhist traditions, early Taoist monastic communities practiced celibacy, vegetarianism, isolation, and fasting (Kohn, 2007). In turn, some Taoist customs were adopted by Buddhists, such as the use of talismans and talismanic seals (Ching, 1997). A talisman is an object or a symbol that is considered to possess supernatural and magical powers (Sorensen, 2000). In Taoism, talismans have been used in a variety of practices, including fasting, as a tool to suppress hunger (Eskildsen, 1998). It also believed that fasting can affect the power of the talisman (Thomas & Pavitt, 2009). Eskildsen (1998) cited this usage as an example of the psychosomatic strength of the Taoist’s faith in the talisman.

Another Taoist practice that was adopted from Buddhism was fasting after the noon hour (Kohn, 2004; Soothill & Hodous, 1937). This tradition was performed by both the hermetic and the cloistered monastics (Eskildsen, 1998). Generally, the main meal of the day would be eaten at noon, followed by either a complete or partial fast until the following day. In Taoist monastics, certain days were set aside for fasting after noon rituals (Kohn, 2004).

As commonly seen in other monastic traditions, some Taoist monks chose to live in solitude. Taoist eremitism is found in early texts, with numerous stories of people leaving their families either to live alone or to live with other ascetics (Eskildsen, 1998). This custom continues today, with recent descriptions of encounters with Taoist hermits in China's wilderness (Porter, 1993). In addition to living alone, Taoist monastics also lived in monasteries and among laity in communities.

The two primary types of Taoism are the priestly and the monastic forms (Eskildsen, 1998). The former is seen primarily in the Heavenly Masters School, and the latter in the Quanzhen school.

The Quanzhen (or Complete Perfection) sect was developed in the thirteenth century (Kohn, 2008) and is still in practice in monasteries throughout Western China (Levering, 1994). In Quanzhen monastics, monks are known as *qiandao* or *daoshi* and nuns are called *kundao* or *daogu* (as cited in Levering, 1994, p. 203). The Quanzhen school is known for its avid asceticism, including strenuous fasts, meditation, and celibacy (Eskildsen, 2004). The Quanzhen masters believed that celibacy—more specifically the absence of ejaculation—prevented hunger during fasting. As a general practice, Taoist monks were celibate as a way of conserving their chi, because the emission of semen was thought to reduce chi (Reid, 1989). This belief was held throughout various Taoist traditions.

The Heavenly (or Celestial) Masters sect was founded in Western China in the second century CE by Chang Tao-ling, an ascetic who reputedly possessed remarkable healing powers (Schipper & Duval, 1994). Chang Tao-ling claimed Lao-Tzu had appeared to him to reveal the tenets of Taoism (Kohn & LaFargue, 2010). Upon receiving the revelation, Chang Tao-ling became the first Celestial Master. The focus of his teachings centered on fasting, purification, and meditation (Kobayashi, 1992).

Asceticism in Shamanism

Shamanism is an ancient spiritual practice and universal belief system that has been and is currently still held by hunting and gathering peoples (Fridman, 2004). Researchers who study shamanism work in diverse academic areas, including anthropology, art, history, medicine, psychology, religious studies, and sociology (Walter, 2004). Although there is archaeological and historical documentation of shamanism from ancient times, most of the literature begins around the nineteenth century (Shepard, 2004).

When Mircea Eliade (1964/1951) wrote the seminal book *Shamanism: Archaic Techniques of Ecstasy* in 1951, he proposed several definitions of what constituted shamanism. According to Eliade, shamanism was a "technique of ecstasy" (p. 4). All of the methods utilized by shamans to induce this ecstasy have been acts of asceticism.

As scholars have continued to study shamanism, the definition has expanded to include figures from nearly every religion and spiritual tradition (Narby & Huxley, 2001). For example, anthropologist Barbara Wilhelmi (2004) suggested that Jesus Christ was a shaman primarily because of his long periods of fasting and his proficient healing abilities.

Research has revealed that shamans are globally distributed. In native cultures, shamans have been found across a variety of regions, including Mongolia (Sarangerel, 2000), Japan (Walsh, 1998), Korea (Kendall, 1985), Africa (Somé, 1995), Ireland (Cowan, 1993), the Amazon (Perkins, 1994), Australia (Harner, 1980), and the Americas (Villoldo, 2000).

Most definitions of shamanism are based on the idea that shamans are intermediaries or facilitators who act in between the human and spirit worlds (Winkelman, 2010). Swiss anthropologist Alfred Metraux (2001/1944) offered the following definition of the shaman: "A person who maintains by profession and in the interest of the community an intermittent commerce with spirits, or who is possessed by them" (p. 97). It is worth noting that some authorities on shamanism have suggested that the definition of shamanism has become too broad. Addressing this point, Michael Winkelman (2004) said,

> Many other modern adaptations, however, were not based upon the primordial hunter-gatherer patterns of shamanism, resulting in the extension of the term *shaman* to a bewildering variety of practitioners, some of which have little relationship to original forms of shamanism. (p. 69)

Winkelman (1992) divided shamanic practitioners into four groups: 1) members of a shaman complex (shamans, shaman-healers, and healers), 2) priests and priestesses, 3) diviners, seers, and mediums, and 4) malevolent practitioners (witches and sorcerers). In his analysis, Winkelman performed a cross-cultural survey of forty-seven societies and found that at least one practitioner in each populace demonstrated the induction of an altered state of consciousness that was associated with ascetic activities, such as fasting, sleep deprivation, and the use of mind-altering substances. In his book *Shamanism: The Neural Ecology of Consciousness and Healing,* Winkelman (2000) explained how fasting, isolation, and other forms of asceticism were the mainstays of shamans, shaman-healers, and healers.

In his research that was conducted in 1944, Metraux (2001/1944) listed several key ascetic practices of South American shamans, including initiation through fasting, dancing, singing, and sexual abstinence. He also noted the use of tobacco or bark teas to contact spirits, out-of-body experiences involving ladders, and levitation exercises. According to Metraux, “The magico-religious practices of the Indians of the tropical rain forest include a spectacular element that has long drawn the attention of travelers” (p. 98). Carmen Blacker (2001/1975), an author on shamanic asceticism, described the work of the shaman as follows:

> He is primarily a healer, one who is capable of banishing the malevolent spirits responsible for sickness and madness and transforming them into powers for good. To acquire the powers necessary for this feat he must accomplish a severe regime of ascetic practice, which should properly include, besides fasting, standing under a waterfall and reciting sacred texts, a journey to the other world. (p. 98)

Shamanic groups are known for extreme asceticism, including sleep deprivation, body mutilation, ingestion of psychedelic substances, and extended periods of fasting (Coan, 1987). In indigenous cultures, shamans believed that painful rites and self-denial were helpful in the attainment of transformation and in the communication with spirits (Gluckich, 2001). Winkelman (2004) explained that shamanic training and initiation always involved ascetic activities, with the goal of inducing altered states of consciousness and seeking contact with the spirit world:

> Shamans’ altered states of consciousness are induced through a variety of procedures: auditory driving (e.g., drumming and chanting); fasting and water deprivation; exposure to painful austerities and

> temperature extremes; extensive exertion from drumming and dancing; hallucinogens and other drugs and sleep, social, and sensory deprivation. (p. 63)

The use of fire in shamanic asceticism has long been a common theme. The fire walking ceremonies that have become popular in the West originated from shamanic practices in the Polynesian islands (Diolé, 1977). Common heat and fire rituals in Zuni, Chukchee, and Ojibway shamans involved fire walking, swallowing burning coals, and touching heated metal objects without being burned (Lepp, 2010). The Zuni shamans specialized in fire tricks, such as a man burning into ashes, and then reappearing minutes later in another ceremony.

Gender identity is a specific area of study among experts on shamanism (Tedlock, 2004). According to Roland B. Dixon (2001/1908),

> One of the broadest distinctions which may be made, in connection with the making of shamans, is that of sex—whether the practice of shamanism is open freely to both sexes, or is more or less restricted to one or the other. (p. 65)

In both North and South America, the number of female shamans as compared to males was relatively small. In some instances there are no references to female shamans at all. However, most cultures allowed females to become shamans, but tended to limit their practice to before and after childbearing years (Winkelman, 2004).

Archaeologists and anthropologists have discovered female shamans and female warriors during the upper Paleolithic period, which occurred in Europe, Africa, and Asia approximately 10,000 to 50,000 years ago (Davis-Kimball, 2004). In the article, *Priestesses of Eurasia,* Jeannine Davis-Kimball (2004) explained the shamanic activities of women during this period of time, which included fasting and solitude. For some fasting rituals, such as fertility practices, men were not allowed to be present. This is in contrast to shamanic rituals from other traditions in which women were not allowed to be present, especially if they were menstruating (Dixon, 2001/1908).

Gender has a different meaning among indigenous people and shamans. In the field of gender studies, the word *gender* refers to a set of cultural meanings that pertain to the similarities and differences between men and women (Tedlock, 2004). In shamanism, these constructs are blurred. For example, many American Indian cultures have historically recognized four genders: man, woman, woman-man, and man-woman (Roscoe, 1998). Some indigenous cultures, such as the Kulina in Brazil, believed that a man could not realize his full male potential unless he became a shaman (Pollock, 1993). Similarly, other societies, such as the Yurok tribe of northern California, held that a woman could only achieve her full female potential if she became a shaman (Buckley, 1992).

Asceticism in Native American Traditions

In Native American spiritual traditions, asceticism is often performed to weaken the body in preparation for other rituals. For example, the Sun Dance ceremony, a ceremony that is practiced by the people of the First Nations, can be particularly brutal (Rader, 2005). Although each tribe has its own distinct practices and ceremonial protocols for the Sun Dance, the ceremonies of each group have many features in common, including dancing, singing, drumming, smoking tobacco, praying, and dry fasting.

The actual Sun Dance lasts 28 days, but the last four days are the period during which the dancing and ceremonial activities take place (Yellowtail, Tootoosis, & Cardinal, 2007). During the last fours days, participants dance all day long out in the hot sun, and abstain from food and drink. Many dancers choose to have their skin pierced. One common practice is piercing the skin on the chest and back of the men and on the arms of the women after they have reached the point of exhaustion. In many cases, the piercing will have an object hung from it, such as a buffalo skull (Fools Crow, 1978). During the Sun Dance hook pull ritual, two sharp hooks are pierced in the upper chest and tied to a stationary object, such as a tree, a pole, or another person (Carrellas, 2012). It is believed that by gradually increasing the tension on the piercings, the participant enters an altered state.

Although not all Sun Dance ceremonies include dancers being ritually pierced, both the Canadian and U.S. governments outlawed that feature of the Sun Dance in 1895 and 1905 respectively (Yellowtail, Tootoosis, & Cardinal, 2007). With increased respect for indigenous traditions, both governments eventually ended these prohibitions. The full ceremony has been legal in Canada since 1951 and in the U.S. since the passage of the 1978 American Indian Religious Freedom Act (Holm, 2005). The Sun

Dance is annually practiced on reserves and in private communities. Often the ceremony is performed in the spring or early summer, with the participants preparing for an entire year prior to the actual ceremony (Rader, 2005).

The piercing, cutting, and removal of the flesh was a central feature in many Native American ceremonies and rituals (Blumensohn, 1933). For example, in the Sioux tradition, flesh offerings were often performed in a sweat lodge while the participant smoked tobacco from a peace pipe (Eagle Feather, 1978). After the flesh is removed, the participant would say a prayer. According to Eagle Feather (1978),

> It is a very painful experience to give flesh offerings, and as the flesh offerings are being cut, the person says: “Almighty God, Great Spirit, have mercy on me. I humble myself today in the sweatlodge and here. I make these flesh offerings as prayers on behalf of my people. These pieces of flesh that I offer came from you in the first place. I have shed tears as I stand here and talk to you. I have shed blood as I talk with you. So I have offered you my body and my heart, O Great Spirit, Almighty God. This is all I can do for you. I have humbled myself. This as far as I can go on my own. From here on it is up to you. Help me, and give me strength and faith and hope. (p. 112)

In the Crow tradition, young men would have pieces of their flesh removed prior to being sent out into the wilderness to fast (Blumensohn, 1933). Their families would remain at home, and would pray over the pieces of flesh, requesting that acts of good fortune be bestowed upon the family.

Many of the ascetic rituals of Native American culture has focused on rites of passage for adolescents. In some Native American tribes, such as the Salinan on the Central Coast of California, enduring scarification or the bites of red ants were common rituals to mark a boy’s transition into adulthood (Mason, 1912). As a type of treatment, ants were allowed to bite parts of the body that were afflicted or in pain. Human rights organizations have protested these methods, which have been forced upon participants, although some methods are voluntary and are regarded as a source of pride and social status (Holm, 2005).

Scarification, which involves scratching, etching, burning, or superficially cutting designs, pictures, or words into the skin as a permanent body modification, has been performed by Native American tribes and other indigenous peoples (Gay & Whittington, 2002). The Pomo tribe from California has used a form of scarification in their Guksu ceremony among selected children (Lyon, 1996). It should be noted, however, that this is among the mildest types of scarification. In the Guksu ritual, the children, who range from five to ten years old, receive two one-inch cuts across the back with a broken shell.

In the Thompson Indians, young girls pierced the flesh of their armpits until they bled to purify their bodies (Blumensohn, 1933). The Shuswap youth ritually cut themselves, cutting the points of their fingers with four half-circles or four straight lines, cutting the outside of each leg, and piercing the inside of each leg afterwards (Blumensohn, 1933).

To put Native American ascetic activities into perspective, it is noteworthy that other indigenous cultures were significantly more brutal. For example, among the tribes of Central Australia, young men partaking in initiation ceremonies were often beaten, circumcised, sub-incised, and had their urethra cut open (MacCulloch, 1913). Some of the tribes would knock out a young man's tooth as part of the ceremony. Furthermore, if the youth exhibited any signs of pain during the proceedings, it was seen as an indication that he was unfit for manhood.

Among Native American tribes, fasting was one of a number ascetic practices that was used for young Indian girls who were entering adulthood (Flinders, 1999). In the Shuswap tribe, girls at menarche would place piles of dry fir needles on their arms, light them on fire, and pray that they would be able to withstand future pain, especially childbirth (Blumensohn, 1933).

Fasting is used by Native Americans as a basic purification ritual, and is often performed in preparation for other religious ceremonies and observances (Foster & Little, 1980). In many traditions, young boys were sent off alone into the wilderness to fast on vision quests that served as initiations into manhood (Mails, 1978).

As horrific as these acts sound, some psychologists believe that these rituals serve an important function in an adolescent's journey into adulthood. In his book *The Human Odyssey: Navigating the Twelve Stages of Life,* Thomas Armstrong (2008) discussed the significance of these rites:

> The types of conditions intended to help children reach adulthood are almost entirely unavailable to adolescents growing up in contemporary culture. One could argue that this is a good thing because modern teenagers avoid the harsh suffering inherent in many of these rites, After all, not everybody made it through these rituals to the other side. There were many deaths from starvation, infection, exposure, and trauma for those not fit enough to join the club. The problem, however, is that today's adolescents for the most part lack any meaningful contact with adults who can show them the way to maturity. (p. 133)

Psychiatrist Stanislav Grof (1985) called the bias against ascetic rites and rituals a "a culture-bound value judgment, rather than an objective scientific opinion" (p. 299). He further elaborated:

> Some phenomena, seen by Western psychiatry as symptomatic of mental disease, have been considered an ancient and non-Western cultures as healing and transformative when they occurred spontaneously. The deep appreciation of these cultures for such forms of experience and behavior is clearly reflective of the fact that they spent much of their time in developing ingenious techniques for inducing them. The mind altering procedures used for this purpose ranged from simple techniques as fasting, sleep deprivation, social and sensory isolation (staying in high mountains caves or deserts) and forced restriction of oxygen supply or other respiratory maneuvers to psychedelic substances. (p. 99)

Another common Native American ritual is the sweat lodge ceremony, a ritual that is one of the most widespread purification ceremonies in North America (Cichoke, 2001). The sweat lodge, a type of sauna that produces moist heat, is a place where physical, emotional, and spiritual healing occurs. In Native American traditions, the sweat lodge ceremony consists of sitting in a heated enclosure for an extended period of time and often includes using herbs, meditation, singing, dancing, and fasting.

Asceticism in Psychology

It has been 100 years since William James (1902/2007) outlined the psychological aspects of asceticism in his seminal book *The Varieties of*

Religious Experience. In his book, considered to be one of the first works that addressed the underpinnings of transpersonal psychology, James wrote extensively about the importance of asceticism and said,

> Since denial of the finite self and its wants, since asceticism of some sort, is found in religious experiences to be the only doorway to the larger and more blessed life, this moral mystery intertwines and combines with intellectual mystery in all mystical writings. (p. 409)

Despite the many positive psychological effects ascribed to asceticism, the majority of mental health professionals take a dim view of it (Fallon & Horwath, 1993). Any shift in this regard will most likely come from the continually advancing perspectives of transpersonal and Buddhist psychology. Asceticism addresses many of the concerns of both branches, such as spiritual transformation and alterations in consciousness (Kornfield, 2001; Vaughan, 1993; Walsh, 2000). Buddhist psychology has made a considerable contribution in this regard because contemporary Buddhist psychologists embrace asceticism in the form of mindfulness meditation (Kornfield, 2001). One of the main goals of this type of meditation is the removal of extraneous thought.

Ralph Metzner (1986) has suggested that Buddhism holds the central concept of self-realization via the removal of obstructions. In our everyday life, vision and thought are obstructed with “thought-coverings,” which Metzner (1986) calls mental blocks or conceptual blind spots that are created in response to emotional cravings and aversions (p. 39). To remove these thought-coverings and become enlightened, one must release his or her attachment.

Ascetic practices, such as fasting and meditation, can facilitate this process, creating a space where we can dwell without thought-coverings. Metzner (1986) said, “In this state, one is no longer attached, through either craving or aversion, to the world of sense objects, of phenomenal appearance. One sees and loves in what one modern seer-writer, Stewart Edward White, called ‘the unobstructed universe’” (p. 39).

The writings of Buddhists and Gnostics equate bodily life with imprisonment. According to Metzner, “Each human being is an immortal deity in mortal bodily form” (p. 60). We are “trapped, bound, and imprisoned” by our mortal form, but inside every person is an “imprisoned splendor” (p. 60).

Central to this way of thinking is the Buddhist concept of the necessity of suffering. David Brazier (2002) suggested that one of the principle beliefs of Buddhism is that there is no enlightenment without suffering. An analogy that is used throughout the study of the Buddhist teachings of the Four Noble Truths is the use of fire. Brazier stated that the Buddha gave the analogy that, “The spiritual life consists of mastery of fire” (p. 177). According to Brazier, “Affliction is the fuel for the fire” and “This is where a modest degree of privation or ascetic practice starts to make sense. Not too much and not too little” (Brazier, 2002, p. 178). Asceticism is the fuel for the fire in that an ascetic act can be helpful or it can be harmful. The outcome often depends on the intent and the intensity.

It is incorrect to equate asceticism with the denial of sensual pleasures. The ascetic often denies themselves something in order to attain pleasure. The word “ecstasy” is frequently used in association with fasting and other ascetic acts (Bell, 1985; Bynum, 1987; Ernst, 1985; Kroll & Bachrach, 2005; Osho, 1973; Vandereycken & van Deth, 1994). In the book, *Wisdom From the Monastery: A Program of Spiritual Healing,* Bernhard Muller (2010) said that people who embrace fasting are “true sensualists” (p. 42).

Conclusion

In the contemporary society, asceticism is thought of by some mental health experts as being pathological, obsessive, or masochistic in nature (Bell, 1985; Brumberg, 1988; Bynum, 1987; Fallon & Horwath, 1993; Vandereycken & van Deth, 1994; Winkler & Cole, 1994). However, proponents of asceticism believe that it creates independence in various areas of their lives, including freedom from compulsions and temptations, as well as deep feelings of peace and increased mental clarity (Bushell, 1995; Gandhi 2001/1961; Valantasis, 2008; Ware, 1995).

According to Fallon and Horwath (1993), “Although many psychiatrists might consider any ascetic or religious practice to be pathological, others take a more neutral view by emphasizing that religious or mystical practice can also be adaptive and creative” (p. 310). The perspective that is taken by health care professionals is often clouded by the extent of self-harm they perceive in ascetic behavior. As long as condemnation of asceticism continues, its virtues will be debated and much of the activity will remain shrouded in secrecy, thereby preventing mainstream society from learning more about the value of these ancient practices.

10

Fasting in Religious and Spiritual Traditions

When you eliminate food from your diet for a number of days,
your spirit becomes uncluttered by the things of this world
and amazingly sensitive to the things of God.

—JENTEZEN FRANKLIN (2008, p. 10)

Throughout history, people from different cultures and religions have extolled the value of fasting (Butcher, 2007; Clark, 2000; Houston, 1998; Rader, 2005; Suvarna & Nirgun, 1974). Numerous references to fasting appear throughout literature: in the Bible, the Qur’an, the Torah, pagan writings, and manuscripts of the ancient Greeks (Ferm, 1945; Rader, 2005; von Braun, 2007; Wedeck & Baskin, 1971). Fasting was a practice in the ancient mystery schools created by the teachers and masters of the mystery religions of Egypt, Greece, and Rome (Stone, 1997).

Thomas Ryan (2005), said, “In the religious experience of humankind, fasting has always been a prelude and a means to a deeper spiritual life” (p. xi). To understand the function of fasting as a spiritual practice, it is useful to begin by defining religiousness and spirituality since fasting is strongly associated with both. In their analysis of religiousness and spirituality, Zinnbauer and Pargament (2005) pointed out that the same critical concepts can be applied to both. First is the notion of *significance,* “a phenomenological construct that involves the experience of caring, attraction, or attachment” (p. 33). The second concept is that of *search.* Zinnbauer and Pargament suggested that search is a critical feature of both religiousness and spirituality:

> The process of search involves the attempt to discover significance. But the searching process does not end with discovery. Once people

> find something significant in their lives, they attempt to hold on to or conserve that significance. Although people are often successful in their efforts to sustain significance, pressures within the individual or within the individual's world may prompt the need for fundamental change. At times, then, the process of search involves transformation of the individual's understanding of or relationship to significance. (p. 34)

This description of transformation helps to explain the profound changes that can occur as the result of an ongoing religious or spiritual practice. The final construct in Zinnbauer and Pargament's analysis is the idea of "the sacred" as a "substantive core" of both religiousness and spirituality (p. 34). "The sacred" refers to the concepts of "God, higher powers, transcendent beings, or other aspects of life that have been sanctified" (p. 34). It is the individual's quest for religious or spiritual significance within this sacred context that inspires them to partake in a spiritual discipline such as fasting.

With respect to the differences between religiousness and spirituality, Zinnbauer and Pargament outlined two basic views. The traditional view sees the terms *religion* and *spirituality* being used interchangeably. The second perspective, developed around the 1980s, arose as spirituality began receiving more attention within psychology as an individualized form of expression. Zinnbauer and Pargament called the relationship between these two views "Institutional objective religion versus personal subjective spirituality" (p. 25).

When considering fasting as a spiritual or religious practice, it is appropriate to treat both perspectives. While it is imperative to understand how an individual approaches fasting as a spiritual practice, it is equally important to acknowledge the long and rich history of fasting in organized religions. The following discussion presents examples of how fasting has been practiced in various religions and spiritual traditions as a spiritual practice.

Robert J. Nash (2001) coined the phrase *religio-spiritual* to explain the belief that—in some instances—religion and spirituality cannot be separated (p. 11). Nash believed that the search for meaning exists in all cultures, across all religions and spiritual practices. Because fasting has such a long history both in world religions and as a personal spiritual discipline, it fits the construct of being a religio-spiritual practice perhaps more than any other ritual. This is specifically due to the manner in which fasting connects religion and spirituality. Edward Farrell described this phenomenon as follows:

> Almost everywhere at all time fasting has held a place of great importance since it is closely linked with the intimate sense of religion. Perhaps this is the explanation for the demise of fasting in our day. When the sense of God diminishes, fasting disappears. (as cited in Piper, 1997, p. 12)

Fasting as a Spiritual Practice

A spiritual practice, sometimes called a "spiritual discipline," is any exercise or activity that is performed with the goal of cultivating spirituality (Sperry, 2001; Walsh, 2000). Examples of common spiritual practices include prayer, meditation, and fasting.

Fasting has been used as a means of releasing emotions and connecting one's soul with the sacred, particularly at significant transition points throughout life. In addition to its function as preparation for divine revelation, fasting has also served as a prelude to important events in a person's life. Through these mechanisms, fasting became a means of transformation.

Len Sperry (2001) said, "Done as a spiritual practice, fasting is defined as abstention from food for the purification of one's motivation. All the great spiritual traditions recognize its merits" (p. 154). Sperry suggested that fasting can be an extraordinarily transformative spiritual practice, "More than any of the other spiritual practices, fasting can surface and uncover not only the obvious but also the more subtle cravings and desires that control one's life" (p. 154).

There are several precepts that constitute the structure of a spiritual practice. Roger Walsh (2000) outlined seven types of spiritual practices:

1. Transform your motivation: Reduce craving and find your soul's desire
2. Cultivate emotional wisdom: Heal your heart and learn to love
3. Live ethically: Feel good by doing good
4. Concentrate and calm your mind
5. Awaken your spiritual vision: See clearly and recognize the sacred in

all things
6. Cultivate spiritual intelligence: Develop wisdom and understand life
7. Express spirit in action: Embrace generosity and the joy of service (p. vii-viii)

All of Walsh's seven principles have been reported during fasting. For example, Native Americans have fasted in order to receive visions that contain instructions on how to cultivate wisdom and live ethically (Narby & Huxley, 2001). In another example, shamans have used fasting to awaken and sharpen their spiritual vision, cultivate spiritual intelligence, and heal others (Rothberg, 2000). In Taoism, fasting has been used with meditation to improve concentration and calm the mind (Eskildsen, 1998).

In a number of religions, such as Judaism and Hinduism, adherents have expressed spirit in action by using fasting as a way to support others (Denton, 2004; Werblowsky & Wigoder, 1997). Similarly, hunger strikers have undertaken long and difficult fasts as acts of service and to correct social and political injustices (Gandhi, 2002/1962; Levy, 2000). Fasting, like other spiritual practices, has the innate power to change the individual, their community, and the world.

Across religions and spiritual traditions, the definition of fasting differs, as does the rigor. Catholicism's Lenten fast calls for the avoidance of meat, but not food altogether, while some individuals have fasted on only water for 40 days in observance of Lent. The Islamic fast during the month of Ramadan requires followers to avoid food and drink from sunrise to sunset, allowing them to eat from sunset to sunrise. The Judaic fast of Yom Kippur traditionally is a dry fast that begins before sunset and ends after nightfall on the following day. Even among these religions, fasting has been practiced in extremes, including fasting for prolonged periods without water or even fasting to death. In fact, among all religious traditions, Zoroastrianism is the only one that forbade fasting (Merriam-Webster, 1999).

In all religions that embrace fasting, the fast is a means with which to access a relationship with divinity. Lynne M. Baab (2006) explained this phenomenon, "Fasting, at its core, is not a discipline of withholding. Fasting is a discipline of making space for God" (p. 27).

Fasting in Christianity

Historically, fasting has been practiced in most of the Christian denominations and churches, including Roman Catholicism (Prince, 2002). Anglicanism (Buchanan, 2006), Eastern Orthodoxy (Fields, 2010), Greek-Catholicism (Bartlett & Taylor, 2010), Oriental Orthodox Churches (Malaty, 1993), and Mormonism (Bagley, 2004).

Ancient Egyptian and Babylonian rituals included fasting as a form of penance that expressed sorrow for wrongdoing (Rader, 2005). Egyptian Christianity during this period held the same beliefs, viewing fasting as a “means of reducing or eliminating tension between the earthbound body and the divine” (Rader, 2005, p. 2997). Egyptian priests and priestesses fasted before entering the temple and as a matter of initiation (Clark, 2000; Houston, 1998). The act of fasting served as a way to transform the individual into a state of worthiness for priestly duties.

Fasting joined Christians to God through a process called *exomologesis,* a form of repentance and public penance (Beard, 2006; Coveney, 2006). According to John Coveney (2006), fasting created a common bond among Christian laity. In her book *Holy Feast and Holy Fast,* Caroline Walker Bynum (1987) claimed that fasting united monastics as well. Bynum emphasized the penitential function of fasting in Christianity: “By fasting, the Christian joined with Christ, who, in the garden and on the cross, kept the rule of abstinence that Adam violated in Paradise and became himself sacrificial food, propitiating God, and saving sinners” (p. 35).

Christian fasting was a way to overcome desire for earthy things. According Richard Foster (1998) in his book *The Celebration of Discipline: The Path of Spiritual Growth,* “More than any other discipline, fasting reveals the things that control us. This is a wonderful benefit to the true disciple who longs to be transformed into the image of Jesus Christ. We cover up what is inside us with food and other things” (p. 48). This view of fasting as a means to remove obstacles that stand between man and God is prevalent among all Christian traditions.

Biblical Fasting

Biblical fasting is the scriptural descriptions of fasting in the Bible. It can also refer to fasting according to the scriptural disciplines. There are 74 references to fasting in the Bible, the best known being Jesus’ 40 day fast in the desert and Moses’ 40 day fast on the mountain (Reid, 1989).

In his biblically based book *God's Chosen Fast,* Arthur Wallis (1980) detailed the long list of references to fasting in the Bible, as well as the saints, scholars, preachers, missionaries, revivalists, and evangelists who have fasted and testified to its value. Wallis called for the Catholic Church to renew the practice of fasting as a means to regain its lost apostolic power. He claimed a biblical imperative to fast and that spiritual power can be gained through fasting.

The belief that prayer is more powerful during a fast dates back to the Roman Empire, when Saint Augustine said, "Do you wish your prayer to fly toward God? Give it two wings: fasting and almsgiving" (as cited in Healy, 2008, p. 63). Bill Bright, an author who devoted his career to writing about prayer and fasting, said, "Fasting combined with prayer is a spiritual atomic bomb that releases the power of God" (as cited in Rogers, 2004, p. 177). In many Christian traditions, it is believed that fasting and prayer is superior to prayer alone. Margaret Roberts Davis (2011) explained this dynamic:

> Prayer is powerful, but when fasting is added to the mix, prayer becomes super powerful… Fasting coupled with prayer moves God to greater lengths than would prayer alone because it displaces physical undertakings with a spiritual focus that is God-centered. (p. 340)

Jerry Falwell, an evangelical fundamentalist Southern Baptist pastor, wrote a number of books on fasting including *Fasting Can Change Your Life,* co-written with Elmer Towns (Towns & Falwell, 1998). In the book, Towns and Falwell interviewed 33 of America's Christian leaders about their personal experience of fasting. The manuscript is filled with stories of men and women who built successful ministries, organizations, and careers based on the practice of fasting.

In 1971, Falwell and Towns founded Liberty University, the largest Christian university in the world. By the late 1990s, Liberty was 70 million dollars in debt and at risk of closure. To raise money, Falwell—who had fasted since he was 18 years old—partook in two 40-day fasts within 105 days in a fundraising effort. Sufficient funds were raised to pay off the debt, and they secured additional cash flow. During the two fasts, Falwell lost 82 pounds, but claimed to have experienced no substantial loss of energy (Towns & Falwell, 1998).

The types of fasting in the Bible have been described as follows:

- **Normal fast:** abstaining from all food, solid or liquid, but not from water (Luke 4:2 New American Bible).
- **Partial fast:** abstaining from selected items in your diet or selected meals. A Daniel fast is a type of partial fast. (Daniel 1:12 New American Bible).
- **Absolute fast:** abstaining from both food and water (Esther 4:15-16 New American Bible).
- **Supernatural fast:** Moses was miraculously able to survive not eating or drinking for 40 days (Deut. 9:9,18; Exodus 34:28 New American Bible).

In his book *God's Plan for Prayer and Fasting,* Falwell (1970) discussed the types of fasting in the Bible, including dry fasting, water-only fasting, and partial fasting. According to Falwell (1981), "Fasting manifests the deep sincerity of a person' s prayer. An old saint once said that fasting prevents luxuries from becoming necessities. Fasting is a protection of the spirit against the encroachments of the body" (p. 55).

John Piper (1997), a Baptist pastor and advocate of fasting, authored *A Hunger for God: Desiring God through Fasting and Prayer.* Piper suggested that various appetites dictate the direction of an individual's life and said, "Fasting in American and other prosperous western nations is almost incomprehensible because we are brainwashed by a consumer culture. We are taught to experience the good life by consuming, not by renouncing consumption" (p. 137).

Jentezen Franklin (2008) is an important figure in contemporary Christianity who has promoted fasting for over 20 years. Franklin, a pastor who has authored several books on fasting, is an authority on biblical fasting. According to Frankin (2012), "Simply stated, biblical fasting is refraining from food for a spiritual purpose" 1).

Fasting in the Roman Catholic Church

In the history of the Catholic Church, fasting is often thought of in terms of the Catholic saints who practiced extensive fasting and other forms of asceticism. Although the Catholic saints are considered holy people who lived extraordinary lives, their extreme asceticism has made them a topic of discussion among theologians, philosophers, and psychologists.

Inedia, Latin for *fasting,* is the alleged ability to live without food (Rey, 2011). The word was first used to describe a fast-based lifestyle within Catholic tradition, which holds that certain saints were able to survive for extended periods of time without food or drink other than the Eucharist (Brumberg, 1988). The ability to survive without nourishment was attributed to some saints during the Middle Ages, including Catherine of Siena and Lidwina of Schiedam, and was regarded as a miracle and a sign of sanctity (Vandereycken & van Deth, 1994). Chapter 11 discusses many of the fasting female saints from this time period.

Among Catholic laity, fasting has been practiced as a means to demonstrate repentance. In this context, fasting teaches control of desires of the flesh, penance for sins, and solidarity with the poor.

In contemporary Catholicism, fasting consists of abstaining from meat on Ash Wednesday and Good Friday, and Fridays in Lent. On Ash Wednesday and Good Friday, two small meals and one regular meal are allowed. The Good Friday fast commemorates the day Christ suffered. Pope John Paul II fasted regularly and said, “Fasting is an irreplaceable training to ensure victory in the battle of life” (as cited in Muller, 2010, p. 41).

The Lenten fast that is observed in the Catholic Church and the Eastern Orthodox Church is a 40-day partial fast to commemorate the fast that was observed by Jesus during his temptation in the desert (Prince, 2002). On Fridays in Lent, no meat is allowed. For many centuries, Catholics were forbidden to eat meat on all Fridays, but since the mid-1960s, abstaining from meat on Fridays outside of Lent has been a matter of local discretion (Massa & Osborne, 2008).

Fasting in the Eastern Orthodox Church

Many Christian traditions have similar perspectives on the importance of fasting. For example, Roman Catholicism, Lutheranism, Anglican Communion, Oriental Orthodoxy, and Eastern Orthodoxy, all have typical fasting periods, such as Lent. This is largely due to the fact that all were influenced by the same spiritual leaders, beginning with Christ’s example of fasting for 40 days in the desert. Following this and other standards of fasting as illustrated in the Bible, numerous figures espoused the virtues of fasting among laity and monastics. One such figure was Athanasius of Alexandria, a noted Egyptian leader of the fourth century (Pope Benedict

XVI, 2011). Athanasius is counted as one of the four Great Doctors of the Church from the East, the other three being Basil the Great, Gregory of Nazianzus, and John Chrysotom (Hall, 1998). All of the Great Doctors discussed the powers of fasting.

Among the Great Doctors was Athanasius, venerated as a Christian saint and considered the father of Eastern Orthodoxy (Gwynn, 2012). Special feast days were established to honor him in Western Christianity, the Coptic Orthodox Church, and Eastern Orthodox churches. As a doctor, Athanasius prescribed fasting for medicinal, spiritual, and psychological purposes. He once said,

> See what fasting does! It heals illnesses, dries excess fluid in the body, drives out evil spirits, chases away bad thoughts, gives the mind greater clarity, makes the heart pure, cleanses the body, and finally leads the person to God. Fasting is a great force and achieves great success. (as cited in Glahn, 2010, p. 206)

At one point, Athanasius was exiled and he went to live with Egyptian monks in the desert (Pope Benedict XVI, 2011). It was there that he became best friends with Saint Anthony of Abbott, whose biography he eventually wrote in *Life of Antony* (Athanasius, & Gregg, 1979). Both Athanasius and Anthony, who were avid proponents of fasting, are honored in Eastern Orthodoxy traditions (McGuckin, 2011).

In the Eastern Orthodox Church, there are several fast periods, including Lent, Apostles’ fast, Dormition fast, Nativity fast, and several one-day fasts (Fields, 2010). Every Wednesday and Friday is considered a fast day, except those that fall during designated “fast-free weeks” (Tyneh, 2003, p. 136).

According to Eastern Orthodox beliefs, fasting strengthens resistance to gluttony and helps open a person to God’s grace. Additionally, fasting must always be accompanied by increased prayer, almsgiving, and donating to a local charity or directly to the poor (Parenti & Clifford, 2002). To engage in fasting without doing charitable efforts is considered a useless act that may even be spiritually harmful (Malaty, 1993).

Among Orthodox Christians, the tradition of Lent is so prevalent that it has caused significant changes in the bio-cultural and agricultural landscape of the regions where it occurs. In a 2012 study, researchers found that the practice of fasting during the 55 days leading up to Easter significantly impacted the wildlife in northern Ethiopia (Yirga et al., 2012). The hyenas of the region normally received most of their food by scavenging on waste from butchers, households, and a local veterinary college. However, during the 5 5-day run-up to Easter, local Orthodox Christians perform a period of fasting. Meat is no longer eaten, so few animals are slaughtered. In response to the lack of food, hyenas were been forced to hunt instead. In order to understand how the hyenas were surviving, researchers in northern Ethiopia examined the hyenas dung during the 2010 Easter season of Lent. The researchers found that while Christians were fasting, the hyenas ate far fewer goats and sheep than they normally had prior to Lent, and their consumption of donkeys doubled.

Fasting in the Mormon Church

Mormonism is the predominant religious tradition of the Latter Day Saint movement (Bagley, 2004). The term *Mormon* is derived from *The Book of Mormon,* one of the faith's religious texts. Adherents, referred to as *Latter-day Saints* or, more informally, *Mormons,* fast in accordance with the *Book of Mormon* and the *Bible* (Ricks, 1988).

In Mormonism, the first Sunday of each month is a fast day. On this day, all members are encouraged to fast from dinner on Saturday night to dinner on Sunday (Ricks, 1988). Individuals, families, and other groups may hold other fasts at will, but this first Sunday is strictly adhered to (Bigelow & Riess, 2008). On the Sunday fast, each family makes monetary contributions to the poor, called *fast offerings,* which are at least equal to, if not more than, the amount they would have spent on food had they not been fasting (Bagley, 2004). These offerings are used by the Mormon Church to give support to the poor. The Church has a highly-organized welfare program for this purpose. After the fast, church members participate in a ceremony called a "fast and testimony meeting" where they discuss their experience (Riess, 2001, p. 67). Another common Mormon fast is the *mourning fast,* performed after a death in an effort "to obtain solace for the living rather than mercy for the dead" (Ricks, 1988, p. 127).

In the Mormon Church, fasting is viewed as an ancient practice that is used as a modern application. The goal of fasting is to create closeness to God during times of trial, tribulation, or temptation. In this manner, Mormons consider fasting to be a preparatory spiritual practice (Ricks, 1988). According to Mormon leader Joseph B. Wirthlin (2001), “Fasting, coupled with mighty prayer, is powerful. It can fill our minds with the revelations of the Spirit.” (p. 11). Wirthlin pointed out that the effects of fasting in Mormonism are far-reaching, fortifying faith, communities, and families:

> Fasting in the proper spirit and in the Lord’s way will energize us spiritually, strengthen our self-discipline, fill our homes with peace, lighten our hearts with joy, fortify us against temptation, prepare us for times of adversity, and open the windows of heaven (p. 11).

In Mormonism, *petitionary fasting* is performed in order to petition for a specific purpose, such as asking God to heal someone who is sick or seeking help making a difficult decision (Ricks, 1988). In addition, a family might fast and pray together for another family in need.

Fasting in Judaism

Fasting has a long history in Judaism during which it has been practiced at times with severity (MacGregor, 1989). Moses fasted for 40 days on Mount Sinai before receiving the Torah (von Braun, 2007), the prophet Elijah fasted for 40 days on his journey to Mount Horeb (Franklin, 2008), and the prophet Daniel fasted in preparation for receiving the revelations (Weems, 2010).

The Essenes, who were founded by the prophet Elijah, lived in ascetic Jewish communities near Egypt and the Dead Sea. *The Dead Sea Scrolls* were written by the Essenes sometime between 150 BCE and 70 CE (Rappoport, 2003). The Essenes used fasting as a means to purify their bodies and bring them closer to God, undertaking 40-day fasts once per year (Cousens, 2005; Haas & Levin, 2006). Elson M. Haas (2012) explained the basis of the Essenes’ philosophy on fasting:

> The Essene Gospel of Peace, transcribed by Edmond Bordeaux Szekely from the third-century Aramaic manuscript, suggests that Satan, his evil spirits, and his plagues will be cast out of our being by fasting and prayer. The Essenes believed that disease came from Satan (they claimed that it took three days without food to starve Satan) and from sins upon our body—the temple, which must be

> purified for God to reside there. To bring God into our life more completely, we would fast on water and "go to the waters (stream, lake) and find a hollow reed, insert it in our rear ends and flush the evils from our bowels. 9)

Jesus was raised in an Essene community, where he learned the practice of fasting which he later passed onto his disciples (Wilson, 2005). Much of Jesus' affinity to fasting is found in the Judaic tradition, most likely due to his Essene association (Rosen & Rosen, 2006). Brad H. Young (2007) discussed Jesus' respect for the Judaic practice of fasting:

> Jesus is not opposed to the Jewish fasts of the sacred calendar of Israel. In strong loyalty to his people and their shared faith commitments, it seems clear that Jesus himself fasted on these days. The clear reference to set fast days of the calendar, 'When you fast…' indicates that he participated fully in the liturgical yearly cycle of prayer and fasting followed by his people. Moreover, in the Sermon on the Mount, he teaches his followers how to fast. Much like his teaching on prayer, he supports the customs of ancient Israel but stresses the necessity for the right attitude of heart. Fasting is accompanied by heartfelt prayer… Prayer should transform the one who prays. The worshiper must seek the face of God with genuine sincerity. Prayer and fasting require inner participation of the heart, soul and mind. (p. 16)

In Judaism, fasting was also instituted as a sign of mourning, when danger was perceived, in preparation for divine revelations, or in gratitude (Rogers, 2004). Fasts were frequently instituted for entire communities, particularly when the nation was believed to be under divine displeasure, such as times of great upheaval, pestilence, or drought (Alinaam, 2005). Judaism historically associated fasting with the recollection of great tragedies (Ryan, 2005). For example, Tisha B'Av is a mourning fast in recognition of the conquest of Jerusalem, the destruction of the first temple in 586 BCE, and the Holocaust.

In his book *Holy Men and Hunger Artists: Fasting and Asceticism in Rabbinic Culture,* Eliezer Diamond (2003) outlined the extensive use of fasting in rabbinic asceticism. Diamond pointed out that fasting became increasingly popular in the wake of the destruction of the second temple in 70 AD. He suggested this development was due to a need to mourn the temple's devastation and claimed that the rabbis saw fasting as a substitute for the loss of temple-related rituals practiced by the *Ma'amadot,* a temple group that would fast, pray, and read from the Torah.

In the *Talmud,* written by thousands of rabbis around 500 BCE, an entire chapter is devoted to Yom Kippur, also known as the Day of Atonement, a dry fast that lasts for 25 hours (Scherman, 1989). Four more days of communal fasting are spelled out in the Talmud, each commemorating historical tragedies (Kolel, 2005). Thus, Judaism recognizes a total of six communal fast days during the year:

- Yom Kippur
- Tisha B'Av (Ryan, 2005)
- Tzom Gedaliah (Bloch, 1980)
- Asarah B'Teves (Katz, 2000)
- Taanis Esther (Scherman & Yudin, 1998)
- Sheva Asar B'Tammuz (Bloch, 1980)

Only Yom Kippur and Tisha B'Av are day long fasts. The other five are from sunrise to sunset (Katz, 2000). These fasts are commonly observed by Orthodox Jews everywhere (Schlossberg, 1997). There are also less frequently observed fasts, such as Yom Kippur Katan (a monthly fast) and the fasts of B' hab, which occur on the first Monday, Thursday, and following Monday after the holidays of Passover and Sukkos (Louis, 1995).

Certain populations are not expected to fast, such as small children, pregnant women, nursing mothers, and those who are ill. After their respective 12th and 13th birthdays, girls and boys must fast in accordance with Jewish law (Scherman, 1989). This coincides with the Jewish ritual of Bar/Bat Mitzvah, which marks a child's passage into adulthood. A girl is viewed as a *Bat Mitzvah* when she turns 12 years of age, and a boy becomes a *Bar Mitzvah* when he turns 13 years of age (Scherman, 1989). Phillip E. Goble (2003) discussed the history of this practice:

> A tradition recorded in talmudic literature… alludes to the fact that in

> Jerusalem during the period of the Second Temple, it was customary for the sages to bless a child who had succeeded in completing his first fast day at 12 or 13. (p. 1232)

Fasting among Jews is sometimes performed for private reasons, such as proceeding a bad experience in order to restore happiness (Ryan, 2005). Other private observations include the anniversary of the death of a loved one or other days commemorating meaningful life events.

Repentance is an important function of fasting in Judaism. In a similar manner as atonement, repentance is demonstrated by fasting and showing remorse or contrition for one's sins. Young (2007) explained the significance of this association, " . . . for the rabbis fasting is nearly synonymous with repentance. One returns home to God by denying oneself, subjugating the strong will for human gratification, over to the divine will for holy living" (p. 15).

Extreme fasting has been undertaken in the mystical branches of Judaism in order to have visionary experiences and as a means of heightening spiritual awareness (Ryan, 2005; Young, 2007). It has been used as a method of transformation in the Jewish practice of Kabbalah, beginning with the Safed Kabbalists of the sixteenth century (Wigoder, Skolnick, & Himelstein, 2002). Kabbalistic principle dictates that followers must adhere to specific spiritual practices, such as fasting, in order to achieve transcendent states of consciousness (Hoffman, 1996).

Psychoanalyst and psychiatrist Gerald Epstein (1995) spoke of the importance of fasting in Kabbalah:

> In fasting, we usually feel light and buoyant because we have established another rhythm other than our ordinary one. Establishing this other than customary rhythm temporarily takes us out of ourselves by altering a habit. This estrangement is lived as a time event because rhythm is a function of time. Now, if fasting is an experience shared by our ancestors through the Hebrew custom of Yom Kippur, then we are able to live past, present, and future in one moment of effort. Through this effort of being together in time, we have shared, by an interior act, the life of our ancestors. (p. 264)

Epstein's depiction describes a phenomenological construct of fasting that occurs across all religions: the ability to tap into the spirit of others who are presently fasting and those who have fasted before us. Fasting does this by removing the barriers that block this connection, including feelings of fear, grief, and sadness. Without these obstructions, the faster has the ability to connect with divinity, humanity, and the spirit world, often through the use of prayer and meditation.

Fasting in Islam

Muslims trace their roots to the Qur'an, which are the sacred writings by the Prophet Muhammad. Muhammad, who lived during the sixth and seventh centuries, fasted for extended periods (Donner, 2010). His best-known fast occurred before the Night of Power, the night the Qur'an was first revealed to him by Allah (von Braun, 2007).

In Islam, the most sacred fast occurs during the month of Ramadan, the ninth month on the Islamic calendar, to honor the period of time when Muhammad wrote the Qur'an (Donner, 2010). Fasting is the third of the five pillars of Islam known as *sawm* (Dykes, 2009). Sawm involves abstaining from eating, drinking, and sexual relations from sunrise to sunset (Ryan, 2005).

Another word for fasting in Islam is *siyam,* which root means “to be at rest” (Bradshaw, 2003, p. 260). Although Muhammad fasted for long periods outside of Ramadan, he taught that Muslims should not fast more than every other day during months outside of Ramadan. He had additional instructions, suggesting Mondays and Thursdays for voluntary fasting and forbidding fasting on Fridays (Douglass, 2007). Fasting is also performed for a few days during the two months before Ramadan and on the sixth day after the festival of Eid al-fitr and Eid al-’adha (Ryan, 2005).

The Muslim scholar, Al-Ghazzali said that the main purpose of fasting is “to purify the heart and to concentrate all its attention upon God” (Al-Ghazzali & Faris, 1995, p. 49). In the Qur'an, Muhammad wrote about three types of fasting; each of which represent a different spiritual intent (McAuliffe, 2002). The first, ritual fasting, is performed on prescribed days to honor someone, such as Muhammad. The second type of fasting is penitent, serving as repentance or self-sacrifice. The third type of fasting is ascetic, having to do with experiencing humility (Dykes, 2009).

Although fasting for extended periods is discouraged, fasting during Ramadan is considered mandatory for every Muslim who is adult, able, and resident (Ryan, 2005). Children under the age of 14 are not expected to fast, but they do partake in special regimens intended to prepare them for fasting. This is usually done in the form of partial abstinence from food for short periods. Fasting for those who are *able* refers to individuals who are emotionally and physically healthy. Lastly, the term *resident* refers to Muslims who are not traveling. If someone is away from home for any reason, he or she is excused from fasting.

Ramadan has a strong association with social solidarity (Ryan, 2005). The month of Ramadan is a period of time when all Muslims fast together. According to theologian Thomas Ryan (2005), “The moral and spiritual benefits accruing from the fasting by one person are increased a millionfold when a million fast together” (p. 76).

Fasting in Sufism

Sufism, a mystical dimension of Islam, is also associated with the teachings of the Qur’an (Renard, 2005). Sufi mystics derived inspiration from the Qur’an and developed as a process of spiritual culture within the framework of Islam (Valiuddin, 1959).

One Sufi proverb says, “Fasting cannot be separated from love” (as cited in Rogers, 2004, p. 89). Many Sufi groups regard hunger as a necessary experience on the spiritual path. Sufi scholar Kabir Helminski (1992) explained the importance of fasting in Sufism as follows:

> Fasting, as long as it is not excessive, is based on a positive relationship to the body, for it eases the burdens the body must carry… Eating our fill hardens the heart, while hunger opens the heart and increases detachment. In hunger some of the veils between us and what is real are removed; remembrance becomes a way of life. Fasting has been a catalyst for awakening in all sacred traditions. Coleman Banks in *Open Secret* translates a Rumi saying this way: “If the brain and belly are burning clean with fasting, every moment a new song comes out of the fire.” (p. 99)

According to William Stoddart (1985), Sufism focuses on engaging mind and will with prayer and fasting. In Sufi customs, fasting is an essential spiritual discipline that curbs physical appetites, and strengthens humility, patience, and gratitude (Renard, 2009). As with other religious and spiritual traditions, the perspective on fasting in

Sufism varies in different orders (Hoffman, 1995).

Traditionally, Sufis have fasted during the month of Ramadan to purify the body and subdue the ego (Bayman, 2001). Malami, a Sufi poet described the relationship between fasting and Sufism in this way:

> True Sufism is observation. It is the disclosure of the unseen.
> It is a struggle with the self and with worldly Mammon.
> It is silence, wakefulness, fasting, and piety, a strict control, hence able to curb a hurtful and hasty utterance.
> Rather, contrary to such a wont, it is the pondering of the wonders of the Creator.
> It is the remembrance of His name, both at daybreak, and once again, when falls the stillness of His eventide. (as cited in Norris, 2011, p. 18)

Fasting is an essential Sufi practice, particularly in the context of the *khalwa,* the traditional 40-day retreat undertaken by initiates in many orders (Farrer, 2009). The retreat was traditionally held in a place of isolation, such as a cave, for the purpose of meditation, prayer, chanting, and fasting (Drury, 2006). Through the process, the Sufi acquires mystical powers, such as the ability to commune with the dead. Karen Armstrong (1994) elaborated on how these techniques assisted Sufi mystics in achieving altered states of consciousness:

> Sufis added the practices of fasting, night vigils and chanting the Divine Names as a mantra to the basic requirements of Muslim law. The effect of these practices sometimes resulted in behavior which seemed bizarre and unrestrained, and such mystics were known as “drunken” Sufis. (p. 226)

More extreme practices include water-only fasting during the 40-day retreat and intermittent fasts for as long as 70 days (Renard, 2009). One Sufi saying that is attributed to Sufi Abu Uthman al-Maghribi states, “The one devoted to the Lord eats only every 40 days, and the one devoted to the Eternal eats only every eighty days” (as cited in Hoffman, 1995, p. 471).

Fasting in the Bahá’í Faith

The Bahá’í Faith is a relatively new religion, beginning in Iran in 1844

(Momen, 2000). Bahá’ís believe that religious history has unfolded through a series of divine messengers, including Buddha, Jesus, Moses, and Muhammad (Stockman, 2012).

Bahá’ís place a great value on fasting and see it as a discipline for the soul (Hatcher & Martin, 2002). Every year from the second of March to the twentieth of March, Bahá’ís have a 19-day communal fast that immediately precedes the Bahá’í new year. The new year occurs on the day of the vernal equinox. Thus, the period of fasting is viewed as a time of spiritual preparation and regeneration for the new year’s activities (McMullen, 2000).

The central purpose of the fast is to purify the soul and rid the person of attachments that distract them from God. Shoghi Effendi (1973), the guardian and head of the Bahá’í Faith from 1921 until his death in 1957, said the following about fasting:

> The fasting period, which lasts nineteen days starting as a rule from the second of March every year and ending on the twentieth of the same month, involves complete abstention from food and drink from sunrise till sunset. It is essentially a period of meditation and prayer, of spiritual recuperation, during which the believer must strive to make the necessary readjustments in his inner life, and to refresh and reinvigorate the spiritual forces latent in his soul. Its significance and purpose are, therefore, fundamentally spiritual in character. Fasting is symbolic, and a reminder of abstinence from selfish and carnal desires. (p. 27)

In the Bahá’í Faith, fasting takes place during Ala, the nineteenth month of the Bahá’í year (McMullen, 2000). The fasts consists of abstaining from food and drink from sunrise to sunset and is required of Bahá’ís who are between 15 and 70 years of age. Bahá’ís often gather together to break the fast, coming together at sunset for celebratory meals at each others’ homes or going out for breakfast before sunrise.

Fasting in the Religions of India

Fasting plays a particularly prominent role in the three principle Indian religions: Hinduism, Jainism, and Buddhism (Thorner, Raj, Krishnaraj, &

Trust, 2000). Fasting has been practiced at all levels of India’s caste system (Lochtefeld, 2002). Although identified with Hinduism, caste systems were also observed among other religions in the Indian subcontinent, including some groups of Jains and Buddhists (Ballhatchet, 1998).

India’s caste system was in place during Brahmanism, the predominant religion in India during the Buddha’s life (Malalasekera & Jayatilleke, 1968). Brahmanism divided the populace into four castes: priests, warriors, traders, and laborers.

Hinduism eventually adopted the caste system which still functions in modern times. Indian tradition developed the four castes in the following order of descending importance; 1) Brahmins (scholars and teachers), 2) Kshatriyas (warriors), 3) Vaishyas (business people), and 4) Shudras (servants) (Shah, 2002). Additionally, there is the lowest caste; known by several different names, including Pariahs, Untouchables, Harijans, and Outcastes (Rogers, 1976). This caste performs the most menial of all jobs, such as the handling of garbage and the dead.

Although Jainism had some form of caste system at one time, the religion no longer embraces it (Shah, 2002). The Buddha emphatically denounced the caste system saying “Birth does not make one a priest or an outcaste. Behaviour makes one either a priest or an outcaste” (as cited in Malalasekera & Jayatilleke, 1968, p. 52). However, this did not prevent caste systems from developing within Buddhism, particularly at the monastic level (Mills, 2002).

Each of the principle Indian religions have had well-known fasting figures, most notably the Buddha in Buddhism and Mahavira in Jainism. Overall, India’s best known fasting figure may have been a contemporary Hindu, Mohandas Gandhi, who became known for fasting as an expression of passive resistance. After a 21-day fast, Gandhi (2001/1961) described the experience as “21 days of uninterrupted prayer,” and said he felt “an indescribable peace within” (p. 315).

Fasting in Hinduism

In the Hindu religion, fasting has been used as a method to achieve purification since the ancient Veda culture over 3,000 years ago (Thomas & Eisenhandler, 1999). In Hinduism, fasting enhances concentration during meditation and worship (Jagannathan, 2006).

Hindus believe than in order to achieve a state of dharma—an enlightened place in the cosmic process—one must be dedicated to the practice of fasting (Fowler, 2002). Devotees pay considerable attention to penance and expiation. The concept of atonement traces back to the Vedas, which discussed various methods of penitence, most notably fasting (Lochtefeld, 2002).

In the Hindu religious tradition, *upavasa* is the term used for fasting for health or spiritual reasons (MacGregor, 1989). Upavasa is usually performed in association with a *vrat* or *vrata,* a practice involving ritualistic fasting that varies from complete abstinence from all food and drink to simple diet modification (Pearson, 1996). The *vrat* always involves taking a vow with a special purpose in mind (Kinsley, 1982).

Hindu vrats and fasting are associated with the nine celestial influences in Vedic astrology and the Hindu gods or goddesses (Sanford, 2004). Devotees will choose a day of the week to do a vrat and fast depending on the planetary influences and the Hindu gods or goddesses that are associated with that day (Behari, 2004). A vrat may be performed on a particular day of the week in order to appease a specific deity in the Hindu pantheon (Sanford, 2004).

The seven days of the week are named after the seven celestial bodies of our solar system; the Sun, the Moon and the planets (Braha, 1993). Other elements taken into consideration are Rahu and Ketu, the two nodes of the Moon; the north and the south, which are the points of intersection of the paths of the Moon and the Sun. Lunar eclipses occur when the Moon and the Sun are at Rahu or Ketu (Johari, 1996). In Hindu astrology, colors and gemstones are used to strengthen, neutralize, or counteract the celestial influence of each of the nine planets (Lochtefeld, 2002; Pearson, 1996).

The following is a list of each day of the week and its Hindu vrat, along with the Hindu deity it is dedicated to, the planetary influence, character, gemstone, and color associated with it.

Sunday: Ravivara vrat is associated with the Sun (Sanford, 2004) and the deity Surya (Pearson, 1996). Some devotees fast throughout the day and eat food before sunset (Sanford, 2004). The colors of the day are red and white (Pearson, 1996) and the preferred gemstone is a ruby (Johari, 1996). Fasting on this day is thought to prevent skin diseases such as ringworm and leprosy (Babb, 1975).

Monday: Somavara vrat is associated with the moon and the deity Shiva (Sanford, 2004). The color of the day is white (Pearson, 1996) and the gem is pearl (Lochtefeld, 2002). Fasting on this day is thought to bring about prosperity and encourage family harmony (Sanford, 2004). As an honor to Shiva, it is customary to fast for 16 consecutive Mondays (Sanford, 2004).

Tuesday: Mangalvara vrat is associated with the planet Mars and the deity Hanuman (Sanford, 2004). The colors of the day are red and orange (Pearson, 1996) and the gemstone is coral or moonga (Johari, 1996). Many devotees fast for the entire day in honor of Hanuman and break the fast while wearing red clothes and offering red flowers (Sanford, 2004). Tuesday is generally considered an unlucky day and many people refrain from certain kinds of activities, such as travel (Lochtefeld, 2002).

Wednesday: Budharvara vrat is connected to Mercury (Sanford, 2004) and the deity Vishnu (Pearson, 1996). The color of the day is green (Pearson, 1996) and the gemstone is emerald (Johari, 1996). Hindu devotees who fast on Wednesdays take a single meal in the afternoon. Observance of this vrat is thought to bestow wisdom, wealth, and good fortune on devotees.

Thursday: Guruvar vrat is associated with Jupiter (Sanford, 2004) and the deity Brhaspati (Pearson, 1996). The color of the day is yellow (Pearson, 1996) and the gemstone is a yellow sapphire (Johari, 1996) or a topaz (Lochtefeld, 2002). Wives will often fast on consecutive Thursdays during certain months of the year in support of their husbands, particularly if a husband has fallen ill (Raheja, 1988).

Friday: Sukravar vrat is associated with the planet Venus (Sanford, 2004) and the deity Devis (Pearson, 1996). The color of the day is white (Pearson, 1996) and the gemstone is a white diamond (Johari, 1996). For this vrat, women will often eat only one meal during the day in honor of the Goddess Santoshi Mata (Sanford, 2004).

Saturday: Sanivar vrat is associated with Saturn and the deity Shani (Sanford, 2004). The color of the day is black (Pearson, 1996) and the gemstone is a blue sapphire (Johari, 1996). Shani is considered a malevolent deity and devotees will often fast and wear black to counter his negativity (Pearson, 1996). Many Hindus avoid long journeys on Saturday and observe the fast to avoid adversities and misfortunes (Lochtefeld, 2002).

There are many details surrounding the vrat rituals. For example, it is best to buy the gemstone on the corresponding day (Johari, 1996). Ultimately, any action that is associated with the stone should also occur on that day, such as the day the jeweler purchased it and when a piece of jewelry is made with it. Furthermore, it is best to have the gemstone placed in the jewelry setting in a manner in which it touches the skin when worn.

According to Vedic astrologers, Monday, Thursday, and Friday are considered auspicious days for women to fast (Pearson, 1996). Contemporary Hindu women often fast to request divine protection for their husbands and sons (Denton, 2004). There are many regularly occurring vrats that only women perform. Anne Mackenzie Pearson (1996) noted that Hindus believe that women are “more able to fast than men on a regular basis, due to greater stamina” (p. 122). However, in Hinduism, Buddhism, and Jainism, even high-caste men may take on a vrat, often on the advice of an astrologer (Pearson, 1996).

In Hinduism, individuals within each caste adhere to specific rules with regards to food consumption and fasting. Brahmans, for example, are strict vegans who must observe frequent, severe fasts (Rogers, 1976). Brahman children begin to practice fasting between the ages of 5 to 9, and must continue even in times of illness and throughout old age.

There are many festivals in Hinduism that coincide with Vedic astrology and involve fasting (Sanford, 2004). One such celebration is the Navaratri, which commences on the first day of the fortnight of the lunar month of Ashvin, the seventh month of the lunisolar Hindu calendar, and lasts for approximately one week (Epperly, 2008). Other festivals that include fasting are Achala Ekadashi, Aja Ekadashi, Amalaki Ekadashi, Anant Chaturdashi, Baruthani Ekadashi, Mokshada Ekadashi, Papamochani Ekadashi, and Papankusha Ekadashi (Verma, 2010).

A powerful fasting tool that is still used in India today is *dharna,* a fast undertaken at the door of an offender, especially a debtor, as a means of obtaining compliance with a demand for justice, such as the payment of a debt (Lochtefeld, 2002). If the person who is fasting dies, the individual whom the dharna is against is said to receive a karmic demerit for causing the person’s death. Dharna is thought to have influenced Mohandas Gandhi in his use of fasting for nonviolence to attain political power (Lochtefeld, 2002).

Another aspect in Hinduism in which fasting is common is the practice of yoga. The word *yogis* was originally reserved for ascetic practitioners of meditation in South Asian religions, including Buddhism, Jainism, and Hinduism, but broadened in the common era to include practitioners of yoga (Demaitre, 2008).

Yoga is a physical, mental, and spiritual discipline, originating in ancient India (DeLuca, 2011; Yogani, 2004). The goal of yoga is the attainment of a state of perfect spiritual insight and tranquility (Yogananda, 2007). In various forms, the word *yoga* is associated with meditative practices in Hinduism, Jainism, and Buddhism (DeLuca, 2011; Ferguson, 1977; Tukol, 1978). Within Hindu philosophy, the word yoga is used to refer to one of the six orthodox schools of Hindu philosophy (Jacobsen, 2010). Yoga in this context is known as *Raja Yoga* and is based on the *Yoga Sutras of Patanjali* (Hartranft, 2011; Vivekananda, 2009). Patanjali’s system is discussed and elaborated upon in many classical Hindu texts, and also has been influential in Buddhism and Jainism. In the book *The Self-Health Guide,* based on the teachings of Yogi Amrit Desai, fasting in yoga is described as follows:

> When we fast, energy is freed for a thorough housecleaning of the system. The body becomes lighter, more flexible; the mind becomes clearer and more creative. Greater intuitive powers may develop and deep spiritual insights may be experienced after a period of time. A feeling of well-being arises when the energy is freed in this way—problems suddenly become solutions and ideas flow from nowhere. (Kripalu Center for Holistic Health, 1980, p.124)

There are numerous fasting retreats throughout the world that incorporate yoga into their programs, with locales in Portugal, Taiwan, Thailand, and the United States (American Yogini, 2011; Ananda Marga Fasting Retreats, 2009; Atsumi Healing International, 2008; Moinhos Velhos, 2010; Siddhayatan Spiritual Retreat Center, 2011).

Fasting in Jainism

Although Jainism is one of the smallest organized religions, it may well have the most predominant practice of fasting. In Jainism, laywomen, in particular, partake in frequent fasts (Jestice, 2004). Furthermore, fasting is more often done by Jain women than men.

In a similar fashion as Hinduism, fasting is performed in Jainism in conjunction with lunar cycles (Dundas, 2002). Prior to undertaking a fast, the participant makes a vow, considered a formal statement of intent (Wiley, 2004). According to M. Whitney Kelting (2007),

> All Jain vows must be taken publicly and receivng the vow statement from a senior woman in the family, as most vow-takers do, serves as a way to monitor a person's fasting to make sure he or she is healthy enough to perform a fast, to ensure that there are enough women in the house to perform household duties, and to check against someone using fasting as a kind of coercion… Though a faster may state her intention to her family to do a multiple day fast, the vow formula itself is stated on a day-to-day basis and thus if the vow-taker is too weak too complete the multiple day fast the fast can be broken without breaching the vow. (p. 192)

Common lengths of fasting include 1, 8, 14, and 28 days, whereas Saints in Jain mythology fasted for up to a year (Laidlaw, 2005). The two sects of Jainism, Digambaras and Svetaambaras, practice many of the same rituals, festivals, and fasting regimens, with some variation between the two (George, 2008).

In Jainism, followers fast and partake in other religious practices on special days throughout the year (Jain, 2009). In any given month, there may be as many as ten days devoted to fasting, and certain days are particularly auspicious. Some of the fasts that a Jain might commonly do include the following:

- **Upavasa:** Giving up both food and water or only food for one day.
- **Chaththa:** Giving up both food and water or only food continuously for 2 days.
- **Aththama:** Giving up both food and water or only food continuously for 3 days.
- **Aththai:** Giving up both food and water or only food continuously for

8 days.

- **Masaksamana:** Giving up both food and water or only food continuously for one month. (Jinalaya, 2001)

Festivals that involve fasting are common in Jainism and fasting is considered a public affair to be celebrated by the family and the community (Chapple, 2007; Dundas, 2002). For example, in 2009, 4,000 Jains fasted together for a yearly festival held by the Jain community called *Varshitap Parva* (Shukla, 2009, ¶1). According to Varshitap tradition, the individual fasts by having only water on one day and two meals on alternate days for 400 days. The Varshitap Parva in 2009 was broken on April 27 at a local sports arena with over 600 attendees, many of them sadhu and sadhvis who had blessed the event.

Another important Jain festival in Paryushana Parva, which means “passing the rainy season” (George, 2008, p. 395). Paryushana is held over a ten-day period during which Jains fast and carry out religious activities. This is one example where there is variance between the Jain sects as the Svetaambaras celebrate Paryushana for 8 days and the Digambaras celebrate it for 10 days (George, 2008). During this period, some Jains fast for the entire 8 to 10 days, some for the lesser periods, but a minimum of three days is suggested in Jain scriptures. Fasting usually involves complete abstinence from any sort of food or drink. The final day of Paryusana, called *Samvatsari,* is the most important. It is considered obligatory to fast on this day. According to Bharat S. Shah (2002), “Samvatsari is the day of the biggest Pratikramana [introspection] to review all possible sins and to apologize for them. It is also for forgiving one another and to become friends again” (p. 79, brackets added).

Another popular festival in Jainism is Paush Dashami, to commemorate the birthday of twenty-third Jain Tirthankara Lord Parshvanath (Jain, 2009). In preparation for the festival, Jain men and women begin a 3-day fast starting on the tenth day of the Posh month of the Hindu calendar. Thousands of people gather for the festival, which takes place in Sankheswar, a town located in Karnataka, a sacred place for Jains.

Maun-agiyaras is a Jain festival that calls for a day of complete silence, meditation, and fasting (Jain, 2009). The focus of the meditation is on five main holy beings in Jainism: monk, teacher, religious leader, arhat, and siddha. Maun-agiyaras is celebrated as the anniversary of the birth of a number of the Tirthankaras.

Another important Jain festival is Viira-nirvaana, commemorating Mahavira's renunciation of his body and attainment of Siddha. According to Jain belief, Siddha are liberated souls who have destroyed all the karma bondings (George, 2008). Devotees undertake a day of fasting and meditation, and a celebration begins the following morning.

So central is fasting in Jainism that followers partake in what is considered the most sacred of acts by fasting themselves to death under the guidance of a personal spiritual guide (Jaini, 1979; Laidlaw, 2005). Even in modern Jainism, devotees routinely choose to fast to death using the ancient ritual of *santhara,* which dates back to around 500 BCE (Chapple, 2007).

There are strict guidelines that a Jain follows when fasting to death.

In Pursuing Death: Philosophy and Practice of Voluntary Termination of Life, S. Settar (1990) explained that, "Without ensuring right causes, no aspirant is to embrace ritual-death" (p. 25). According to Settar, Jain literature identifies the following as appropriate occasions for pursuing santhara:

1. When one suffers from an incurable disease
2. When one encounters severe famine
3. When one faces impossible conditions to sustain spiritual life (p. 25)

When practicing this ritual, the participant first gives up solid food and eventually—when death draws closer—all forms of liquid and hydration (Chapple, 2010).

Santhara aligns with the practices of Jain monasticism in which monks fast to death following the example of their teachers (Parrinder, 1973). Theologian Christopher Key Chapple (2007) described the process and purpose of santhara as follows:

> When life reaches its natural decline, and when death has been deemed imminent by a competent medical authority, a Jaina might request to embark on the ultimate act of nonviolence through fasting, specifically the *sallekhana* or *santhara* fast. This fast, described in the medieval texts, emulates the passing of Parsvanatha and Mahavira, who at the end of their very full lives, gradually renounced

> all food, then all water, and then finally died, consciously moving into their permanent abode in the Siddha Loka. For an ordinary Jaina monk or layperson, it would hopefully guarantee an improved next birth. (p. 220)

Santhara is a subject of controversy in India, where it is estimated that at least 200 Jains die during the ritual each year (Murray, Huber, & Mechem, 2008). Some place the number of deaths considerably higher, assuming they go unrecorded. While santhara is currently legal in India, members of the legal profession have attempted to outlaw the practice. Additionally, human rights organizations contend that santhara is comparable to suicide and euthanasia, which are illegal in India. Other opponents of the practice claim that adult children use it as a means of avoiding caring for their elderly parents (Kannampily, 2011). Justice Pana Chand Jain, a retired judge and spokesperson for the Jain community, explained the Jain position on santhara:

> Santhara cannot be termed as suicide… the person [undertakes] santhara with an open mind and conscious thought, everything is known to the people and it is undertaken by people who have a pure soul. This is nothing but faith in our religion and anything which is a part of ongoing customs, traditions and rituals is protected by the constitutional guarantees. (as cited in BBC, 2003,¶10)

Santhara, like all fasting in the Jain tradition, is used to purify the soul. The fast initiates a trance-like state that enables the individual to reach karmic transcendence, a key principle of their doctrine. Rosemary Rader (2005) described how Jain fasting facilitates this process:

> Within Jainism, there is the belief that certain ascetic practices, like fasting, are purificatory in that they can remove the accumulation of *karman* that weighs down the life-monad. Fasting could therefore carry people upward along the path to liberation from karman. (p. 2997)

During santhara, a Jaina abandons all desires and dislikes and concentrates exclusively on spiritual matters as death approaches. It is not sufficient to simply not eat when fasting. The participant must also stop wanting to eat. If the desire for food persists, the fast is pointless.

Jainism holds that fasting transforms the karman of the participant by purifying the effect of past actions.

Fasting in Buddhism

Buddhism is considered to be an Indian religion, and is one of the oldest and most predominant religions of Asia (Gethin, 1998). In Buddhism, the practice of fasting originated with the extreme ascetic experiences of the Buddha (Hellmiss & Kriegisch, 1999).

There are many subsets within Buddhism, but most can be classified into three major branches: Theravada, Mahayana, and Vajrayana (Rogers, 2004). As Buddhism developed, the practice of fasting was encouraged primarily on the monastic side. However, as Buddhist laity has developed, fasting has become more and more common.

In Tibetan Buddhism, there are a number of fasts practiced in the Mahayana and Vajrayana traditions. Ningne is a Mahayana fasting practice with an objective of avoiding future existence in the lower realms (Khandro, 2012). Ningne is a half-day fast and, on the designated day, the participant starts in the morning by taking 8 vows to be kept for a 24-hour period. No breakfast is eaten, and the meal for the day, usually vegetarian, must be taken by 1:00PM. In the afternoon, liquids are permitted. The Ningne is a daily practice of monks and nuns in the south Asian tradition.

Nyungne is a Vajrayana fasting practice with the objective of healing the body (Rinpoche, 2009). Originally, nyungne was a three-day fast in deference to the thousand-armed form of Chenrezig, the Bodhisattva of Great Compassion. A modified version of the fast lasts only one and a half days and is performed under the guidance of a teacher, called a *lama.* The Kagyu tradition, one of the six main schools Tibetan Buddhism, is known for 3-day fasting retreats that focus on devotion to Chenrezig (Kwan Um Zen School of Zen, 2011). The retreat is conducted in meditation and silence, except for the recitation of a mantra.

The nyungne practice originated with Bhikshuni Laksh-Minkara, an Indian princess who received a vision of Chenrezig (Wangmo, 2005). Laksh-Minkara was an 8th-century Tantric philosopher and teacher of Buddhism (Gould, 2006).

Another common fasting practice in Tibetan Buddhism is not eating after noon. This observance is associated with the Theravada tradition and the 13 dhutanga practices of austerity discussed in chapter nine (Wijayaratna, Grangier, & Collins, 1990).

Considering fasting from a Buddhist perspective can be problematic. This is largely due to the fact that the Buddha had radical fasting experiences (Wilson, 2004), yet is said to have promoted moderate asceticism (Thurman, 1995). Based on this discrepancy, the topic of asceticism in Buddhism is an ongoing controversy.

The Buddha's Fasting Experience

Most accounts indicate that the Buddha practiced fasting and other forms of asceticism over a period of 6 to 7 years, during which he performed a variety of austere activities that were traditions of popular ascetic movements at that time (Wilson, 2004). One particular group that he associated with, known as the Sramanics, used psychosomatic disciplines designed to help the participant transcend the state of conditioned existence. This included long periods of breath control, living in non-traditional places such as caves or forests, going unclothed (or clothed in uncomfortable materials such as bark), fasting, and eating restricted diets.

This period in the Buddha's life serves as the starting point of the controversy as to whether or not he believed in asceticism as a constructive spiritual practice. Carl Olson (2005), professor of religious studies at Allegheny College, discussed some of the specific techniques that the Buddha used during his years of “arduous” austerity (p. 27). For example, one of the Buddha's ascetic practices included breathing in and out of his nose and mouth rhythmically to the point of severe headaches, auditory hallucinations, fever, and intestinal problems (Olson, 2005). The Buddha also spoke of engaging in more extreme asceticism, such as “sleeping on bones in the cemeteries, crawling into cow pens to eat cow manure, and consuming his own feces and urine” (as cited in Olson, 2005, p. 27). This kind of self-mortification is not unusual in the history of ascetics. It should be noted that the Buddha pursued all of these activities during prolonged periods of fasting. The fasting Catholic saints were known to go to similar extremes, such as voluntarily consuming infectious bodily fluids of their dying patients (Bynum, 1987, p. 172).

The Buddha has been quoted as speaking both favorably and against asceticism. A reasonable explanation for this may be due to the fact that some of his ascetical activities (such as fasting) were beneficial in the early stages whereas they became injurious when carried out for too long. For example, the Buddha pursued fasting to the point where he became emaciated and described his condition as follows:

> All of my limbs became like the joints of withered creepers… my gaunt ribs became like the crazy rafters of a tumble-down shed my scalp became shriveled and shrunk and the skin of my belly clung to my backbone. (Keown, 2003, p. 149)

One cited reason as to why the Buddha adopted a more moderate view of asceticism has to do with his being influenced by peer pressure (Wilson, 2004). Liz Wilson, professor of comparative religion at Miami University, claimed, “A critical juncture in his ascetic regimen occurred when he accepted an offering of rice boiled in milk and was rejected by his ascetic companions as hedonistic” (p. 33). The Buddha was characterized as being dejected and angry, and subsequently denouncing the ascetic practices of those who had rejected him (Wilson, 2004).

Another plausible explanation for the conflicting reports on the Buddha’s view of asceticism suggests that scholars misinterpreted his opinion to serve their own agendas. According to Wilson (2004), the assimilation of Buddhism into popular culture forced its leaders to take a moderate stance on asceticism in order to differentiate themselves from more radical Indian religions, such as the Sramanics and the Jains.

As Buddhists competed for support and acceptance from the lay population, “Antiascetic sentiments began to be expressed as Buddhists responded to critical remarks…” (Wilson, 2004, p. 33). Rival religious groups and polemics pressured those in the Buddhist community to focus on the Buddha’s negative comments on asceticism, while overlooking his more positive opinions. Wilson stated, “The biographical tradition of the Buddha’s discovery of the Middle Way after practicing extreme asceticism was developed in this polemic context” (p. 33). This is a fairly radical assertion, suggesting that some of the facts pertaining to the Buddha’s philosophies may have been skewed to make Buddhism more homogenous. In addition to social pressures against asceticism, it is reasonable to assume that some branches of Buddhism may have held a narrow view of asceticism as extremist and self-centered.

Ambivalence towards asceticism within Buddhist traditions may have to do with the manner in which Buddhism equates contentment with possessing very little and shies away from the aggrandizing that has been associated with some ascetics, particularly those who practiced during medieval times. Again, it may be helpful to consider the agendas behind these views and the fact that these opinions were formed long after the Buddha's death.

Rupert Gethin (1998), author of *The Foundations of Buddhism,* said, "Buddha had originally intended to institute only a movement of committed ascetics removed from society; these are the true and original Buddhists" (p. 87). According to Gethin, this indicates that the concepts of moderation and lay followers were—at most—an afterthought for the Buddha.

In respect to the ongoing debate about the extent to which fasting and asceticism is accepted in Buddhism, the fact that it continues to be practiced speaks for itself. Liz Wilson (2004) said it best, "There is no denying that the Buddhist emphasis on moderation militates against extreme asceticism. But it is equally clear from ethnographic and textual studies that ascetic practices are deeply woven into the fabric of Buddhism" (p. 33). Given the fact that contemporary Buddhist psychologists embrace ascetical activity, it will most likely become even more prominent (Brazier, 2002; Epstein, 2004; Goleman, 1996; Kornfield, 2001).

In order to get a better understanding of the Buddha's personal view on asceticism, it can be useful to take a closer look at his practice of fasting, a ritual that he performed extensively.

The Buddha's fasting experiences played a central role in the formation of Buddhism. According to Stephen Harrod Buhner (2012), the Buddha's fasting experiences set the example of fasting for those who have followed Buddhism. The Buddha spoke highly of fasting and said that during his fasts, "My soul becomes brighter, my spirit, more alive in wisdom and truth" (as cited in Hellmiss & Kriegisch, 1999, p. 16).

Around 500 BCE, Siddhartha Gautama (The Buddha) left his affluent family in search of enlightenment (Brazier, 2005). Siddhartha believed that desire was the root of mortality and that if he led an ascetic life he could end desire and gain liberation from suffering. After prolonged fasting in an attempt to achieve enlightenment, he concluded that he had attained nothing and decided to end his fast. He ate, regained his strength, renewed his meditation, and realized Buddhahood. Only after he stopped fasting did he realize his mahabodhi, or great awakening.

The Buddha' s story of fasting demonstrates how spiritual awakenings occur during *the process* of fasting, not just as a result of it. His experience illustrates how the physiological and spiritual changes during a fast affect an individual over time; before, during, and afterward. Once the ascetic act is over, a spiritual awakening can occur as the mind, body, and spirit move back into a more even state of consciousness, subsequently causing a shift in the participant's view of self in relation to reality. In this manner, ascetic experiences cause spiritual awakenings, visions, and peak experiences that vary in perceived degrees of intensity. This phenomenon can feel particularly enormous after the fast is broken and when refeeding occurs.

Acts of asceticism can cause a breaking and rejoining of the mind, body, and spirit. When this occurs on a conscious level, the magnitude of the dismemberment can be extraordinary. As the self is deconstructed, rearranged, and reconstructed, it can cause momentary anxiety and confusion, often followed by exceptional clarity. This may explain why some historians believe that the Buddha's fasting experience was the spiritual vehicle for his enlightenment (Buswell, 2004). By removing his attachment for food—the most fundamental of human needs—the Buddha extracted from his life the major obstruction to his self-actualization.

The Buddha's fasting experiences were nothing short of transformational. According to Richard Valantasis, a Professor of Ascetical Theology, ascetic acts, such as fasting, are intensely transformative on multiple levels of self. He described ascetical reconstruction as follows:

> At the center of ascetical activity is a self who, through behavioral changes, seeks to become a different person, a new self; to become a different person in new relationships; and to become a different person in a new society that forms a new culture. As this new self emerges (in relationship to itself to others, to society, to the world), it masters the behaviors that enable it at once to deconstruct the old self and to construct the new. Asceticism, then, constructs both the

> old and the reformed self and the cultures in which these selves function. (Valantasis, 2008, p. 7)

Valantasis' description illustrates how ascetical practices can create paradigm shifts as the experience alters both the participant and the world in which he or she lives. In this respect, ascetical behavior has the potential to create global paradigm shifts. This was demonstrated in the Buddha's case as his fasting and other ascetical practices are directly related to the formation of Buddhism and to its contemporary practices.

Fasting in Taoism

Fasting has been extensively practiced in Taoist traditions with the belief that it could produce immortality (Eskildsen, 1998). The primary types of fasting in Taoism are water-only fasting, dry fasting, consuming only herbs, and fasting with water and herbal mixtures (Than, 2006). When a fast includes herbal preparations, they are often in the form of potions or porridges (Eskildsen, 1998).

Taoist mystics, who flourished in China in the fourth and third centuries BCE (Smith, 1980), used various techniques such as fasting, meditation, and trances (Kohn, 1992). According to Livia Kohn (1992), the mystics' goal was to "empty themselves" in an effort to "reach the Tao deeply hidden within" (p. 8).

The *Zhonghuang jing,* an ancient Taoist text from around 700 CE, detailed what has been deemed "the most strenuous of all Taoist fasting regimens" (Eskildsen, 1998, p. 44). So severe was the practice of fasting in the *Zhonghuang jing,* that the participant was encouraged to keep on fasting even after becoming weak, thin, and yellow (Eskildsen, 1998). In his book *Asceticism in Early Taoist Religions,* Stephen Eskildsen (1998) summarized the practice as follows:

> The adept quits eating solid foods immediately and also tries not to drink fluids. He frequently swallows air through his mouth and into his esophagus, which is supposed to suppress his hunger and furthermore nourish his body with the "primal *qi*" of the cosmos. By continuing this for many days, the adept purges the defiling *qi* of ordinary foods ("grain *qi")* from his body and also exterminates its internal demons. (p. 44)

The protocol in the *Zhonghuang jing,* like other Taoist methods of fasting, involved complex breathing exercises that suppress hunger. The breathing exercises served a variety of purposes, including purifying the sinuses and nasal cavities (Than, 2006). The Taoist Master Hung Yi-hsiang said, “You can live two months without food and two weeks without water, but you can only live a few minutes without air” (as cited in Reid, 1989, p. 144).

The *Zhonghuang jing* emphasized the purification process that occurs during fasting and claimed that it takes two weeks just to rid the body of waste matter. Eskildsen (1998) described the protocol the faster does during this regimen:

> After knocking his teeth together thirty-six times, he clenches both fists tightly around his thumbs and proceeds to swallow air. During the course of breathing, the adept does not exhale the air that he has inhaled into his lungs; rather, he hold it in his mouth and swallow it, sending it through his esophagus and into his stomach. This continued until his stomach feels full. The swallowing of air can be repeated whenever he feels hungry… After thirty days, the lower elixir field (located in the belly in a spot behind the naval) become full, and the adept no longer experiences hunger. (p. 45)

In Taoist fasting, a paranormal phenomenon occurs and the faster undergoes a deep transformation. Eskildsen (1998), explained, “After 300 days, he can see any evil spirits in his environment and is invulnerable to their deception” (p. 45).

The *Daoji tuna jing,* another ancient Chinese text, also called for rigorous breathing exercises during long periods of fasting (Eskildsen, 1998). Other ancient scriptures, such as the *Tuna jing,* described shorter fasts of around 9 days. It is worth noting that all three of these ancient Chinese texts, *Zhonghuang jing, Daoji tuna jing,* and *Tuna jing,* maintain that if fasting is performed correctly, the person will become severely emaciated but will recover if the fasting continues (Eskildsen, 1998). Other ancient Taoist texts, such as *Yuding jing* and *Sandong zhuang,* discuss the nobility in fasting to death (Eskildsen, 1998). Part of the value of fasting to death was overcoming the fear of dying.

Another important feature of Taoist fasting was the use of saliva during breathing exercises. It was believed that “The constant saliva swallowing transforms the adept into an immortal, superhuman being with no digestive system" (Eskildsen, 1998, p. 56). To increase the saliva, a chant is used followed by rubbing the tongue on the roof of the mouth.

I was taught a Taoist fasting tradition that did not allow bathing after the first 24 hours of beginning the fast. It was believed that submersing the body in water prevented toxins from being expelled through the skin. Bathing recommenced 24 hours after breaking the fast.

Fasting has been discouraged in China since the communist revolution in the 1950s primarily because fasting was associated with Buddhist and Taoist practices (Weeks, 2012). Furthermore, some scholars have asserted that Taoist followers downplayed the importance of fasting in order to make Taoism more appealing, much in the same way that Buddhist followers did (Ellingson & Green, 2002).

In various parts of the world, Taoist fasting is carried out in a variety of traditions. Some Chinese medicine practitioners provide fasting instruction for their patients (Dupuis, 2012; Yang, 2012) and retreats often provide training with on-site supervision (Harmon, 2012; Tao Garden Health Spa & Resort [TGHSR], 2009). The Dark Room Retreat consists of fasting using ancient Chinese traditions that are said to be the key to immortality (TGHSR, 2009). The types of fasting performed during Dark Room Retreats vary widely, and are often done using Pi Gu (Harmon, 2012; TGHSR, 2009).

As discussed in chapter five, Pi Gu is a meditation technique that has different traditions and levels. Pi Gu (also called *Bigu)* is translated to mean the avoidance of grains (Tam, 1998). However, the avoidance of grains is actually a lesser level of the practice. Eskildsen (1998) explained the goal and methods involved in Pi Gu:

> However, the actual objective is to reduce one's intake of all foods. To do this, adepts ingested an amazing variety of hunger suppressing substances and potions and devised numerous techniques such as visualization, incantation, air swallowing, saliva swallowing, breath holding, and talisman swallowing. (p. 154)

According to Tom Tam (1998), "When people are in the Pi Gu condition they may not eat for a day, a week, and in some instances for a year" (p. 5). At retreats where Pi Gi instruction is provided, participants fast according to what level they are at and what Pi Gu tradition is being taught. Some will eat simple foods, while others will juice, water, or dry fast (Chia, 2012; Harmon, 2012; TGHSR, 2009).

Within the tradition of the Heavenly Masters, an early Taoist movement, fasting was a highly organized event. The goal of fasting was often to heal and save the community (Pengzhi, 2010). The Heavenly Masters had numerous authoritative positions, such as the community master, community administrator, community supervisor, and community assistant (Xunliao, 2010). One of the duties of these administrators involved overseeing fasting rituals. For example, the community master was also the fast officer, often called the ritual master (Xunliao, 2010, p. 502). The community master was in charge of preparing the community for religious observances and activities, such as fasting. According to Zhang Xunliao (2010),

> For Daoists, the preparation and execution of a fast (zhai) was the core activity for any practicing Daoist. By arranging both a fast and a ritual offering, participants would listen to a master's homily, receive scriptures and ritual knowledge, pray to end suffering, seek blessings, and request that various spirits might manifest their divinity in their presence (literally, "bring [them] to perfection" *zhizhen).* (p. 513)

Toward this end, many other community leaders were involved, including the fast supervisor, fast director, and grand fast director. In addition to these positions, people from the monastic divisions played supporting roles, such as "keeper of registers, verger, thurifer, scriptural attendant, incense attendant, and attendant…" (Xunliao, 2010, p. 514). Although they were considered monastics, many of these people lived among the community.

Another tradition originally associated with the Heavenly Masters and Mahayana Buddhism is the *Lingbao* texts (Pengzhi, 2010). The Lingbao scriptures were written some time between 420 and 471 CE, most likely by more than one author (Eskildsen, 1998). The Lingbao canon was responsible for integrating the concepts of karma, retribution, and universal salvation in Taoism (Lagerwey, 2010). The Lingbao system required regular fasting according to strict protocols, with ten days per month devoted to fasting. Many of the customs that were performed in the Lingbao fast, such as the recitation of scriptures and ritualistic movements, were taken from Buddhism (Pengzhi, 2010). According to one Lingbao scripture,

> As for the greatness of the fasts, none is greater than the Lingbao fast of the Most High. The writs of Lingbao are the primordial root of heaven and earth, the gateway of the spirits and deities, the ancestral progenitor of all scriptures, the bridge to the limitless great teaching. (as cited in Chengwen, 2010, p. 798)

Another common fasting practice in Taoism—found in the Lingbao and elsewhere—is fasting after the noon hour (Pengzhi, 2010). Often this would involve eating one meal per day at noon and nothing thereafter (Eskildsen, 1998).

Fasting in Paganism

Paganism is a term used to refer to religious traditions which are polytheistic or indigenous. It is primarily used in a historical context to refer to Greco-Roman polytheism and other polytheistic traditions of Europe and North Africa that pre-date Christianization (Spence, 2003/1901). Contemporary paganism, also referred to as *neopaganism,* consists of reconstructed religions, such as Wicca (Walter & Fridman, 2004).

Scholars claim that the practice of fasting occurred in early paganism, which is not surprising due to the fact that fasting dates back to the Stone Age (Goscienski, 2005; Lambert, 2010; Lewis 1892). In discussing the tradition of fasting in paganism, Abram Herbert Lewis (1892) said,

> But the history of Lent shows unmistakably its pagan origin. Its source is found in the fasting which the Babylonians associated with the Goddess of Reproduction, whose worship formed the starting-point of Easter. During that period of fasting, social joy and all expressions of sexual regard were forbidden, because the goddess then mourned the loss of her consort. (p. 280)

One of the best known modern pagan traditions is Wicca. Wicca is a modern new-age religion developed in England in the first half of the 20th century that draws upon a diverse set of ancient pagan religious motifs for its theological structure and ritual practice (Hutton, 1999). The religion usually incorporates the practice of witchcraft (Dunwich, 1997).

In some Wiccan traditions, fasting is seen as a way to draw closer to the divine, to cleanse the body, and to prepare for more elaborate rituals (Dunwich, 2000; Wedeck & Baskin, 1971). The point of fasting is to deny the body physical pleasures and needs in order to attain a deeper connection to the Gods.

In Wicca, there are different types of spiritual fasting. For example, a devotee may abstain from food but not from drink for a prescribed period of time. In another example, the faster may eat during certain hours of the day, but not others. According to Gerina Dunwich (2000),

Wiccan witches normally fast before practicing rituals of magic in the following manner:

> Magick is the science of the secrets of Nature, and in order to work it properly, a Witch must always work in perfect harmony with the laws of Nature and the psyche. Bathing in salted water and cleansing the inner body by fasting for a whole day before performing a magick ritual is often necessary, especially in ceremonial magick. To be able to produce power, the physical body must be kept in a healthy condition. (p. 89)

Wiccans often combine ritual fasting with meditation to enhance spiritual introspection, reflection, and growth (Dunwich, 1997). One such practice is *sex magic,* a term for using sexual energy in the practice of magic. A premise of sex magic is the concept that sexual energy is a potent force that can be harnessed to transcend one's normally perceived reality (Alexander, 2011). In the Wicca tradition of sex magic, fasting is considered to be an essential preparatory practice (Alexander, 2011; Dunwich, 1997).

Fasting in Shamanism

Shamanism is an ancient spiritual tradition that is thought to be thousands of years old (Villoldo, 2000). Ancient hieroglyphic writings and artwork from the pre-Columbian Mayan civilization described shamanic trance states that were induced by fasting, bloodletting, and the ingestion of hallucinogens (Shepard, 2004).

In shamanic traditions, fasting has been an essential spiritual technique found globally among a variety of cultures (Fridman, 2004; Nicholson, 1987). Long periods of fasting are a common theme in shamanism

(Flaherty, 1992/1938). For example, shamans in the Peruvian Amazon were known to fast weeks and even months (Glass-Coffin, 2004). When Europeans came to the Americas five centuries ago, they wrote about indigenous healers who “fasted until they looked like skeletons” (Narby & Huxley, 2001, p. 1). In addition to water-only fasting, shamans are known for dry fasting (fasting without liquids), a custom that is widely practiced among North American shamans (Degarrod, 2004; Winkelman, 2004a).

In 1908, American anthropologist Roland B. Dixon (2001/1908) explained the importance of fasting in shamanism:

> It goes without saying almost, that the most widespread method is that of fasting and solitude. The weakening of the body and the stimulation of the imagination through these means is almost universally regarded as one of the most efficient ways of getting into communication with the unseen world, and is employed alike by the shaman novice and by the seeker for spiritual aid of all sorts. Very frequently there is added to this requirement of fasting and solitude that of bodily cleanliness. This many be attained by frequent bathing in remote lakes or streams, by the use of the sudatory, or by either of these means, with the added requirement of rubbing the body or scenting it with fragrant herbs and roots. Not infrequently, also, this exterior cleanliness must be accompanied by inner cleansing as well, and we have then the use of various sorts of purgatives and emetics. (p. 67)

Shamans have also been known to recommend fasting to the people they work with to cure a variety of medical and psychological problems. For example, in Brazil, shamans have prescribed fasting and seclusion to help dispel the spirits of the recently deceased (Conklin, 2004).

The French priest, Antoine Biet went to South America in 1652 and documented the customs of the area’s indigenous inhabitants. Biet observed that the shamans of the communities, known as *piayes,* underwent rigorous trainings that included fasting until they lost consciousness, being bitten by black ants, and drinking large quantities of tobacco juice to induce hallucinations (Biet, 2001/1664). Only after enduring these practices were the participants deemed as being ready to serve as shamanic healers.

The Native American shaman, sometimes referred to as a medicine man or medicine woman, used fasting for a variety of purposes, such as to induce or reduce rainfall (Swanton, 2000/1928). As was performed by shamans from other cultures, the medicine man or medicine woman would seek spiritual transformation through communication with the spirit world. Initiation dreams—in which the dreamer is contacted by a deity, spirit, or ancestor—are a part of the Native American shamanic tradition. Krippner, Bogzaran, and De Carvalho (2002) wrote, "Among many contemporary native people, initiation dreams are still viewed as being important. It is believed that they can be elicited by prayer, by fasting, or by vigils" (p. 135). Among many tribes, dreams are actively sought by the entire community through celebrations that involve fasting, dancing, singing, drumming, rattling, sweating, and ingesting hallucinogens. Initiation dreams are also sought after during vision quests, a ritual that is discussed in the next section on fasting in Native American traditions.

In North America, shamans claimed to receive their healing abilities through fasting (Kehoe, 2004). For example, a Winebago shaman who was named Thundercloud told anthropologist Paul Radin that he had obtained his curing power by fasting. During his fasts, Thundercloud said he had visions of "beings who live in a doctors' village in the sky, those who live in a village in the ocean, and finally a grizzly bear who lives at St. Paul" (Kehoe, 2004, p. 282).

Japanese shamans, whose practices had Buddhist influences, were known for severe asceticism, including long periods of fasting, seclusion, standing for hours under waterfalls, and scaling mountains (Blacker, 1999). The goal of these austerities was to heal and banish malevolent spirits. One Japanese shamanic fasting ritual called "tree eating" involves fasting to death. In his book, *The Catalpa Bow: A Study of Shamanistic Practices in Japan,* Carmen Blacker (1999) described this practice as follows:

> Suffice to say that these men, all of whom were members of the ascetic order based on Mt Yudono, made a vow to perform the tree-eating austerity for the period of one thousand, two thousand or even three or four thousand days. During the first part of the discipline their diet consisted of nuts, bark, fruit, berries, grass and sometimes soy in fair abundance. The quantity of these things was then reduced until by the end of their allotted period they had undergone a total fast of

> many days. Ideally, if the discipline were properly calculated, the man should die from starvation, upright in the lotus posture, on the last day of his avowed fast. His body should have been reduced to skin and bone, all flesh and visceral contents having long disappeared. (p. 67)

For the shaman, fasting can be a discipline in and of itself, or it can be a means to access other rituals (Lansford, 2004). For example, shamans often combine fasting with other ascetic practices in order to heighten the experience and to bring about a trance state, commonly referred to as an *altered state of consciousness* (ASC). Roger Walsh (1998) explained this phenomenon, “Not content with the rigors of solitude, fasting, or cold alone, shamans sometimes combine all these…” (p. 66).

Fasting is an established method for creating a shamanic ASC and increasing spiritual awareness (Winkelman, 2004b). It is used as a means to contact the spirits, to gain knowledge and power, and to diagnose and heal (Harner, 1980; Metzner, 2001). A fundamental feature of this belief system is the idea that the spirit overtakes the body after the use of specific techniques, such as fasting (St. Pierre, 2002). Ralph Metzner (2001) described this process as follows:

> The central experiential practice in shamanism is entering into an altered state of consciousness, referred to as a “shamanic journey,” ecstasy, or trance. The methods for inducing this state, which Mircea Eliade calls “techniques of ecstasy,” include the ingestion of hallucinogenic plants, chanting, drumming, special postures or dance movements, fasting, isolation or various kinds of ordeals. (p. 50)

Contemporary shamans, sometimes referred to as *neo-shamans,* practice traditional methods of altering consciousness, most notably fasting and isolation. Based on the entrainment practices of Buddhism and other Eastern traditions, modern shamans have added other methods, such as photic driving (strobe lights), hypnotic induction, and flotation tanking to induce altered states of consciousness (Doore, 1988).

Fasting in Native American Traditions

The use of fasting in Native American traditions has its roots in animism and magic (Rogers, 1976). Animism encompasses the beliefs that there is no separation between the spiritual and physical world, and souls or spirits exist, not only in humans, but also in all other animals, plants, rocks, geographic features such as mountains or rivers, and other entities of the natural environment (Harvey, 2005). Many traditional Native American religions are fundamentally animistic (Roth, 2011).

The notion of magic in Native American traditions is found in the art of producing a desired effect through the use of specific practices (Michno, 2003). These practices include incantations, ceremonies, rituals, and various other techniques that are thought to influence the forces of nature.

A well-known Ojibway legend, made famous by Henry Wadsworth Longfellow is *Hiawatha,* a story about a young boy named Wunzh, who must retreat deep into the woods to fast before he can become a man (Longfellow, 1874; Rogers, 1976). Once in the woods, Wunzh decides to fast not only for his own benefit, but for the welfare of his entire tribe. His selfless act attracts a spiritual visitor who bestows special seeds upon Wunzh, which in turn grows enough corn to feed his whole community (Holbrook & Hall, 1901).

In almost all Native American tribes, puberty was accompanied by fasting, which J. A. MacCulloch (1913) called “adolescence initiation ceremonies” (p. 226). MacCulloch noted that these rituals contained a variety of ascetic activities in addition to fasting, “several of which are most severe and painful, but must be undergone willingly in order to preserve their effect” (p. 226).

In her book *Chippewa Child Life and Its Cultural Background,* Mary Inez Hilger (1992) told of the extensive fasting that was performed by Chippewa boys:

> Boys fasted alone for 10 days, drinking only a birchbark dish of water (one-half cupful). When boys fasted they learned in their dreams how to become warriors… The father decided when the boy should go. The boys were sent about the time their voices were expected to change, and they stayed for 10 days. Usually, two boys went together—never three or four—and these were generally related, like cousins, or were good friends. Many liked it best to go out alone. (p. 49)

Carol Flinders (1999) told a story about witnessing a similar ritual among Karuk Indian girls who participate in a 10-day ceremony customarily performed at menarche. Called *The Flower Dance,* it consisted of chanting, dancing, and fasting just as their ancestors had. Flinders spoke of the girl’s transformation into womanhood as follows:

> They fasted rather strenuously, and they were blindfolded for the entire time: when the blindfolds were at last removed, it was understood that the girls looked on the world now with a woman’s eyes. (p. 308)

The best-known fasting practice in Native American traditions is the vision quest. This rite of passage consists of going into the wilderness and fasting until a dream—or vision—is received (Lyon, 1998). In many tribes, such as the Hopi, the fast brings a guardian spirit who directs the participant’s future conduct. This guardian spirit, sometimes called a *manito,* is believed to be a supernatural being that protects the person throughout the rest of their life (Narby & Huxley, 2001, p. 69).

In their book *The Book of the Vision Quest: Personal Transformation in the Wilderness,* Steven Foster and Meredith Little described (1980) the essence of the vision quest:

> The fasting process is one of readying the soil for a seed to be planted in it. Some call this process self-purification. The seeker empties the body so that the spirit may be filled. By eliminating food from the system, you symbolically encourage death, which waits to fill your emptiness. Living thus in the proximity of death, life is enhanced, made brilliant and terrifying. (p. 34)

According to Foster and Little (1987), “Fasting is a traditional act of self-empowerment… You feel at one with all those who have already walked the path of the vision quest before you” (p. 97).

Within Native American Indian traditions, the Sioux Sun Dance is a ritual that is held yearly. Before the dance, participants are tutored by shamans and undergo a fast (Villoldo & Krippner, 1987). In addition to the Sioux, other Plains tribes attend as well. During the ceremony, the dancers are “inspirited and transformed” through social healing and altered states of consciousness (p. 176). Other similar Native American celebrations include the Dakota Sun Dance, the Cheyenne New Life Lodge Dance, and the Ponca Mystery Dance (Rader, 2005).

In many tribal cultures, fasting has traditionally been used for several purposes, such as before a hunt, to prevent natural disasters, before battle, and during mourning (von Braun, 2007). Fasting is believed to be an effective method for attracting good fortune and dispelling insalubrious influences. According to anthropologist Jules Blumensohn (1933),

> The Central Algonquian used the fast in a *personal relation* with the supernatural. They believed that by fasting the suppliant underwent such suffering, made himself so weak, that the spirits were overcome with pity, and so granted him whatever he desired. (p. 451)

In Native American spirituality, fasting was used to transform prayer into action. Native Americans would fast to create connection with the spirit, receive guidance, build inner strength, and be of service to others (Oneroad, Skinner, & Anderson, 2005). Fasts were performed with other rituals as a means of purifying the mind, body, and spirit.

Fasting was used in Native American medicine for curative purposes, such as dispelling grief. Warriors frequently fasted before and after fighting (Blumensohn, 1933). Native American elders prescribed fasting to transform feelings of trauma around genocide and blame. Krippner and McIntyre (2003) described the process of this ritual:

> For example, an individual may approach an elder to ask how to wash away the shame and grief from the past. The individual may be instructed to fast and bathe for four days, all the time letting go of hatred and destructive energy that surfaces each day. This is called si'satxw in the Tsimshian language. Through the act of cleansing the individual practices awareness. (p. 31)

In his article, *The Fast Among North American Indians,* Jules Blumensohn (1933) told the story of a Crow Indian named Scratches-face who fasted in mourning after three of his brothers had been killed. Alone, without any family or belongings, Scratches-face cut off his own finger after holding it toward the sky sand saying “I am poor, give me a good horse. I want to strike one of the enemies, and when I go on a good road I want to marry a good-natured woman. I want a tipi to live in that I shall own myself’ (p. 460).

Another manner in which Native Americans have utilized fasting to assist in mourning is through the use of sweat lodges. Although the use of saunas in tribal culture has traditionally been associated with eliciting visions, it has also been used with fasting as a ritual to honor and purify survivors (Kroeber, 2006). In his book, *The Religion of the Crow Indians,* Robert Harry Lowie cited the story of Scratches-face's mourning fast:

> I fasted because three of my brothers *(akúpe)* had been killed… When an Indian had an *akúpe,* he could take anything they had and give it away. When all of mine were killed, I was alone, had no horses, nor anything else. (as cited in Lowie 2000/1922, p. 337)

In Native American cultures, fasting has also been used as a means of preparation for all type of events, even sports. For example, the Choctaw, originally from the Southeastern United States, would fast from the evening before playing a ball game in order to obtain supernatural help (Swanton, 2000/1928).

Conclusion

Fasting is a phenomenon often evoked for spiritual or religious reasons. In this context, it is associated with ideals and beliefs that consider it an important practice leading to the initiation and maintenance of contact with divinity or some other supranatural or transcendent being. Catholic priest and yoga instructor Tom Ryan (2005) said,

> Fasting as a religious act increases our sensitivity to that mystery always and everywhere present to us… It is an invitation to awareness, a call to compassion for the needy, a cry of distress, and a song of joy. It is a discipline of self-restraint, a ritual of purification, and a sanctuary for offerings of atonement. It is a wellspring for the spiritually dry, a compass for the spiritually lost, and inner nourishment for the spiritually hungry. (p. 163)

Whether in organized religions or indigenous spiritual traditions, fasting has two primary functions. It can be used as a personal spiritual practice or as a means to help others. In both respects, fasting promotes transformation and develops a deeper sense of spiritual awareness.

11

Inedia in Religious Mystics and Catholic Saints

The saints who waged war against their own body so relentlessly were treated by many of their credulous contemporaries with reverence and awe.

—WALTER VANDEREYCKEN & RON VAN DETH (1996, p. 25)

Inedia, the alleged ability to live without food, is a fast-based lifestyle originally established within the Catholic tradition (Freze, 1989). In Christianity, the notion of inedia holds that certain saints and mystics were able to survive for extended periods of time without food or drink other than the Eucharist (Rey, 2011).

The Eucharist, also called *Holy Communion* and the *Blessed Sacrament,* is a Christian rite reenacted in accordance with Jesus' instruction at the Last Supper (Cruz, 2009). At that time, Jesus' gave his disciples bread and said, "This is my body" and then gave them wine and said, "This is my blood" (Matthew 26:26-28 New American Bible).

The protocol of the Eucharist varies in different Christian traditions. In the Catholic Church, it begins with a priest consecrating bread and wine. It is believed that the consecration turns the bread and wine into the actual body and blood of Jesus through transubstantiation, which is the conversion of one substance into another. After the consecration, the priest gives the bread and wine to church members for consumption. In most Christian traditions, fasting is done for at least 8 hours before taking the Eucharist. The Catholic saints and mystics claimed to have fasted for weeks to months beforehand.

The saint and mystic Catherine of Siena summed up the Christian perspective with regards to the consumption of the Eucharist when she said, “To eat Christ is to become Christ” (as cited in Bynum, 1987, p. 245). Catherine was one of many female saints who were able to fast for extended lengths of time, stopping only occasionally to eat the Eucharist.

Scholars have come to refer to this type of prolonged fasting as *miraculous abstinence* (Bynum, 1987; Brumberg, 1988; de Vineis, 2009; Hamilton, 2005; Schulenburg, 2001). Numerous religious mystics and Catholic saints have claimed to be able to live in this manner, making them the focus of admiration and skepticism.

Fasting saints and mystics were thought to have been affected by *anorexia mirabilis,* which literally means a miraculous loss of appetite (Brumberg, 1988; Lelwica, 2002; Tobias, 2007). Anorexia mirabilis differs from the more modern anorexia nervosa in several ways. In anorexia nervosa, people usually starve themselves to attain a level of thinness, which is why the disease is associated with body image distortion. By contrast, anorexia mirabilis was frequently coupled with other ascetic practices, such as lifelong virginity, flagellant behavior, the donning of hairshirts, sleeping on beds of thorns, and other assorted acts of self-mortification.

Many mystics and saints were stigmatists, people whose bodies are marked by religious stigmata, marks resembling the wounds of a crucified Christ (Freze, 1989). Approximately 80% of all stigmatics are women (Carroll, 1989) and stigmata is often associated with long periods of fasting and sleeplessness (Cross & Livingstone, 1997).

In Christianity, fasting is often seen as imitating Christ’s suffering, a realignment of misguided priorities, and initiating a deeper connection to God (Wallis, 1981). The major season of fasting is Lent, inspired by Jesus’ 40-day fast. This is an example of attempting to be more Christlike; a form of emulation called *imitatio Christi,* Latin for “imitating Christ” (Wheatley, 2007). Sylvia A. Sweeney (2009) explained the relationship between Lent and *imitatio Christi* as follows:

> The custom of preparing for Easter with a season of fasting and penitence grew from three primary impulses. 1. A need to respond to the presence of sin in the body of Christ and particularly to provide a means for the reconciliation of community members who had grievously sinned; 2. A need to prepare catechumens for baptism; 3. A desire to imitate Christ’s forty day wilderness experience. (p. 26)

One of the best-known examples of fasting and *imitatio Christi* was that of the Catholic saints. The saints would frequently fast for extended periods in order to demonstrate their devotion to Christ, to imitate his suffering, and to draw closer to him.

The fasting activity among the Catholic saints was not always associated with divinity. Although the saints were known for their fasting visions of God and Christ, they also had apparitions of demons. Saint Anthony, an Egyptian ascetic, reportedly had demonic visions after fasting. Nevill Drury (2006) proposed that Saint Anthony's visions were actually hallucinations that were caused by the bread he ate after breaking his fast, bread that may have been infected with ergot, a fungus from which the drug LSD is synthesized. Other reports of demonic apparitions included those of Catherine of Siena, who claimed to have seen and heard demons telling her to quit fasting and return to a normal life (Flinders, 1993). Eric N. Rogers (1976) said,

> Psychologists confirm that when people go without food for lengthy periods, they commonly experience hallucinations, which they interpret as mystical revelations. But simpler civilizations have a more mystical explanation: Fasting purifies. When the faster has denied himself long enough, he is fit to receive a direct message from some higher power. (p. 28)

In his book, *Holy Anorexia,* Rudolph Bell (1985) noted 261 cases of women who fasted to the point of starvation for religious reasons between the time period of 1206 and 1934, many of whom were elevated to sainthood. Of course, not all mystics and saints were women and not all were Catholic. However, severe ascetic fasting practices were the most prevalent in the women from this period. This section focuses on some of the more well-known prodigious fasters from this group, followed by a brief discussion of some of the male figures.

Religious Mystics

Religious mystics were men and women who believed in the existence of realities beyond normal human comprehension. Mystics were usually followers of religious or spiritual traditions and were known to have had dedicated ascetic practices (Underhill, 2009).

Most religions have texts that describe fundamental mystical experiences. One example is the Catholic mystics, who followed the models of Jesus' asceticism and disciplined their bodies through activities ranging from sleep deprivation and brief fasting to more extreme forms, such as self-flagellation and fasting to the point of starvation.

There are numerous mystics who became saints or achieved saintlike status by remaining alive despite fasting for what appeared to be impossible lengths of time. Portuguese anthropologist João de Pina-Cabral (1986) called these women "non-eaters" (p. 227). Religious mystics had a variety of exceptional human experiences brought about by fasting, including visions, feelings of ecstasy, and physical transformations such as stigmata. The following are brief biographies of some of the best known female Christian mystics.

Anne Catherine Emmerich

Anne Catherine Emmerich, mystic, stigmatist, and visionary, was born in Westphalia, Germany in 1774 to a poor Catholic peasant family (The Vatican, 2012). From an early age, she helped with the house and farm work and was employed for a time as a seamstress (Schmoger, 2004). She applied for admission to various convents, but was rejected because she lacked a substantial dowry.

In 1802, at the age of 28, Emmerich became an Augustinian nun and began showing signs of stigmata (The Vatican, 2012). From then until her death, she bore the wounds of stigmata known as the *Crown of Thorns,* which are wounds on the forehead. From 1812, she bore the full stigmata of Our Lord, including a cross over her heart and the wound from the lance in her side (Schmoger, 2004). In addition to stigmata, Emmerich had numerous visions beginning when she was a small child. She claimed that she spoke with Jesus, had seen the souls in Purgatory, and witnessed the Holy Trinity (Emmerich, 2004/1923). These phenomena brought Emmerich fame and investigation by scientists and the Catholic Church (Powell, 1996; The Vatican, 2012).

Emmerich routinely fasted for the last three days of Holy Week (the last week of Lent and the week before Easter), fasting until dinner on Easter Sunday (Schmoger, 2004). During the last 12 years of her life, she subsisted entirely on the Holy Eucharist and drank only water.

Emmerich was beatified in 2004 by Pope John Paul II (The Vatican, 2012). However, the beatification was not completed because it was discovered that literature attributed to her was reputably fabricated by Clemens Brentanom, a poet who had interviewed her.

Therese Neumann

Therese Neumann was a Catholic mystic and a stigmatist (Vogl, 1987) who claimed to have paranormal visions (Steiner, 1976). She was born in 1898 in the village of Konnersreuth in Bavaria, Germany, where she lived all of her life. She was born into a large family with little income.

In March of 1918, Neumann was partially paralyzed after falling off a stool in her uncle’s barn (Vogl, 1987). She sustained other falls and injuries during this period, and after one particular fall she lost much of her eyesight (Illes, 2011). By 1919, she was completely blind and bedridden, and had developed severe bed sores that sometimes exposed her bones.

According to Neumann, her eyesight was restored in April of 1923, on the day Therese of Lisieux was beatified in Rome (Illes, 2011). Neumann had been tirelessly praying novenas in anticipation of that day.

Around Christmas of 1923, Neumann “accepted a disease of the throat in place of a priest who was suffering in this way” (Hynek & Sheppard, 1932, p. 57). Afterward, she was unable to swallow solid food, and consumed no food other than the holy Eucharist until her death in 1962 (Summers, 2003/1951). In addition, she maintained that she did not have any water from 1926 until her death (Vandereycken & von Deth, 1994).

Although Neumann claimed that she ate nothing but the Eucharist for decades, the Roman Catholic Church never officially recognized her claims as being true. According to author Bergen Evans (1954), Neumann was “the most famous of contemporary non-eaters. The number of ecclesiastical and medical dignitaries who have vouched for the truth of her claims is impressive” (p. 97).

In May of 1925, when Therese of Lisieux was fully canonized as a saint in the Catholic Church, Neumann said that the saint cured her of her paralysis and her bed sores vanished (Illes, 2011). In November of 1925, Neumann was diagnosed with appendicitis and took to her bed again (Illes, 2011). Instead of having surgery, she asked to be taken to church, where she claimed her appendicitis was cured after she prayed to

Therese of Lisieux.

Neumann developed stigmata in March of 1926 in the form of a small wound above her heart (Illes, 2011). In addition, she reported a vision of Jesus at Mount Olivet with three Apostles. Numerous visions and stigmata followed. On Good Friday in 1926, Neumann said she witnessed the entire Passion of Christ in a vision. She had wounds on her hands and feet accompanied by blood coming from her eyes. Neumann continued to have these experiences every Friday thereafter (Ferguson, 1977).

By July of 1927, Neuman maintained she had not eaten for over three years. To evaluate her claim, a medical doctor and four Franciscan nurses watched over Neumann for 24 hours per day for two weeks (Rogers, 1976). They confirmed that she had consumed only one consecrated holy Eucharist each day. In addition, they claimed she had no weight loss, dehydration, or other ill effects. According to Caroline Walker Bynum (1987), those who observed Neumann concluded that “her inedia was total and extended” (p. 297).

In 1946, Paramahansa Yogananda (2007/1946) visited her and wrote about her in his book *Autobiography of a Yogi.* He wrote an entire chapter, *Therese Neumann, The Catholic Stigmatist of Bavaria,* in which he provided a vivid first-hand description of one of her vision trances. Yogananda believed fervently in Neumann’s claims and said,

> By ecclesiastical permission, Therese has several times been under close scientific observation. Dr. Fritz Gerlich, editor of a Protestant German newspaper, went to Konnersreuth to “expose the Catholic fraud,” but ended up reverently writing her biography. (p. 357)

According to Yogananda, Neumann said during his visit, “One of the reasons I am here on earth today is to prove that man can live by God’s invisible light, and not by food only” (as cited in Yogananda, 2007/1946, p. 357).

Marthe Robin

Marthe Robin, born in 1902 on a farm in Châteauneuf-de-Galaure, France, was a French Roman Catholic mystic and stigmatist (Blake, 2010; Freze, 1989). She was the youngest of six children and her father was displeased that she had not been born a boy (Burton, 2004).

When Robin was two, one of her sisters died from typhoid after drinking polluted water from the farm's well. Robin and another sister became sick as well, and neither of them ever fully recovered (Peyrous, 2010). When she was 16, Robin suffered a series of falls. By the time she was 21, she was completely paralyzed and bedridden and remained so until her death at 79 (Burton, 2004).

By the age of 23, Robin was fasting routinely (Burton, 2004). For the next 53 years, she reportedly never slept and she ate nothing but the Eucharist (Peyret, 1983). According to journalist Leo Knowles (2003), Robin was "one of the twentieth centuries greatest mystics" (p. 25).

In 1928, Robin became a Franciscan and in 1936 founded the Foyers de Charité (Blake, 2010). In modern times, the Foyers de Charité are in over 40 countries (Foyers de Charité, 2008).

At age 28, Robin began bearing the stigmata every Friday and experienced the pain of Christ's crucifixion (Burton, 2004). She had numerous visions (Burton, 2004) and once said, "I saw Jesus moving through the world" (as cited in Knowles, 2003, p. 25).

From her sickbed, Robin organized aid for the poor and imprisoned, started two schools, and conducted spiritual counseling up until her death in 1981 (Burton, 2004; Knowles, 2003). When Robin died in 1981, nearly 7,000 people attended her funeral (Foyers de Charité, 2008).

Alexandrina Maria da Costa

Alexandrina Maria da Costa, also known as Alexandrina of Balasar, was a Portuguese mystic born in 1904 in Balasar, a rural parish of Póvoa de Varzim, Portugal (Freze, 1989; Geoghegan, 2008). As a young girl, she had exceptional physical strength, which allowed her to work long hours on her family's farm (The Vatican, 2011).

When she was 12, da Costa developed a serious infection and almost died (Geoghegan, 2008). At 14, da Costa experienced a traumatic event from which she never recovered. Her former employer and two other men attempted to break into her room and assault her. To escape them, da Costa jumped 13 feet down from a window and broke her back. After the attack, she suffered gradual paralysis and by 19, was confined to her bed, where she remained for over 30 years (Gallick, 2007).

Beginning in March of 1942, when da Costa was 38, she began to have visions of Christ, during which he spoke to her (Gemzoe, 2005). For the next 13 years, she received no food except for the Eucharist (Geoghegan, 2008) and became stigmatic, reliving the Passion of Christ every Friday. Her weight eventually dropped to 73 pounds (Geoghegan, 2008). She was examined by medical doctors who, after running numerous tests, were unable to cite the exact nature of her condition (Gallick, 2007).

In the late 1940s, the Catholic Church investigated da Costa's claims of having visions of Christ and concluded that her apparitions were inauthentic and caused by neurosis (Gemzoe, 2005). The Archbishop announced a ban on public visits to her house and the withdrawal of holy communion, which meant she would no longer receive the Eucharist. Between da Costa's personal protests and the public's desire to see her, the church was unable to suppress visitors or withhold her receipt of the Eucharist. By the beginning of the 1950s, da Costa was receiving over 100 visitors per day (Gemzoe, 2005).

Although some scholars claim that de Costa died from self-induced starvation as a result of anorexia nervosa (Gresh, 2011), she also has been called "one of the most important mystics of the twentieth century" (Gallick, 2007, p. 310).

The Fasting Catholic Saints

The fasting saints of the Middle Ages are considered holy men and holy women by the Catholic Church. Ironically, the same church viewed many of them with extreme skepticism—at times denouncing them—primarily because of their extreme fasting.

In her thesis, *A Thin Body Carries the Most Definition(s): Reconceptualizing Voluntary Self-Starvation as an Act of Resistance,* Jane Nicholas (2000) proposed that the Catholic Church condemned fasting due to the perceived power that it gave to the women who fasted:

> The Church had political reasons for opposing voluntary self-starvation. Women who self-starved gained power over the clergy as they undermined the authority of the clergy by partially evading them. It was Church dogma that the only way to God was through clergy. (p. 18)

Nicholas' thesis is intriguing because it suggests that some who fast for religious reasons may also be politically motivated. Nicholas went so far as to assert that the female fasting saints were attempting to make a political statement with the frail appearance of their bodies.

In the book *From Fasting Saints to Anorexic Girls: The History of Self-Starvation,* Walter Vandereycken and Ron von Deth (1994) said the fasting saints' contemporaries considered them to be "God's chosen ones, with whom He communicated" (p. 25). In order to establish this special relationship with God, many fasting saints went to extreme lengths, only breaking fasts when they received the holy Eucharist or small amounts of bread or wine.

The fasting saints created both negative and positive biases toward fasting during the Middle Ages. Medieval authors explained fasting as supernatural in nature, inspired either by miracles or demons (Bynum, 1987). At the same time, not eating during this period was seen as a natural occurrence, not as a condition to be cured. The question of whether the fasting saints were anorexic continues to be debated. As Bynum pointed out, "The answer depends on which definition of anorexia we choose" (p. 201).

What follows is an example of some of the better known and well-documented stories of Catholic saints who were prodigious fasters, the great majority of whom were women. For many saints, their full birth name has not survived the passage of time, so they are generally referred to only by their first name.

Mary of Oignies

Saint Mary of Oignies was born in 1167 to a wealthy family in Nivelles Brabant in Belgium (Walsh, 2007). From her early youth, Mary felt a calling to follow a religious life (Mulder-Bakker, 2007).

Mary's parents arranged her marriage when she was 14, but she persuaded her husband not to consummate the marriage (Benedictine Monks et al., 1966). She convinced her husband that they should lead a life of abstinence and poverty and turn their home into a leper hospice (McGinn, 2006). Mary gave away as much of her fortune to the poor as she could, and she spent her days caring for the lepers, often healing the most intractable cases (Barry, 1967).

As word of the miracles Mary performed on the infirmed attracted attention, she moved to Oignies where she worked under the spiritual tutelage of James de Vitry, a local priest and one of her staunchest supporters (Walsh, 2007).

In 1207, at the age of 40, she began living as a hermit near Oignies. She spent the rest of her life there, praying for souls in purgatory and providing spiritual counseling (Brodman, 2009).

According to the Benedictine Monks of Saint Augustine's Abbey at Ramsgate (1966), Mary was "favoured with supernatural charismata" (p. 380). In Christianity, supernatural charismata are spiritual gifts related to miraculous abilities that are empowered by the Holy Spirit (Veenhof, 1989). These abilities include the capacity to perform miracles, such as healing, and are always performed for the benefit of others.

Mary was noted for having a variety of paranormal experiences including visions, especially of the Passion of Christ, the Blessed Sacrament, and Saint John (Delaney, 1980). According to theologian John L. Delaney (1980), Mary "had the gift of prophecy and the ability to look into the past and to know what was occurring in distant places; she was a mystic with great psychic powers as well" (p. 393).

Mary was a devoted ascetic, fasting for extended periods of time, stopping occasionally for the Eucharist. She was a vegetarian, dressed exclusively in white, and was known to self-mutilate, cutting off pieces of her own flesh (Bowie, 2006). Ernest W. McDonnell (1954) maintained that Mary was the first known stigmatist, having received the stigmata twelve years prior to Saint Francis of Assisi's well-known experience.

In addition to her prodigious fasting, Mary claimed to go without sleep. When someone asked her how she tolerated long fasts without sleep, she said, "These tears are my feast; they are my bread day and night; they feed my mind. Rather than emptying and afflicting my head, they satisfy to my soul" (as cited in Gallick, 2007, p. 190).

Juliana of Cornillon

Saint Juliana of Cornillon, also known as Saint Juliana of Liège, was born in 1193 at Retinnes, a city near Liege, Belgium (Bradbury, 2011/1873). From her early childhood, she had a special devotion to fasting, which she was taught by a religious woman who was caring for her (Bynum, 1987).

As a child, Juliana was frequently punished for excessive fasting and her sisters often wondered how she lived on so little food (Bynum, 1987). When told to eat, she said, "I want better and more beautiful food" (as cited in Bynum, 1987, p. 116).

When she was five years old, Juliana's parents died and she was sent to school at the Convent of the Augustinian Nuns of Mount Cornillon (Shapcote, 1877). It was there, at the age of 13, that Juliana decided to take vows and become a nun.

The convent where Juliana lived was divided into three parts: one part was the Convent for Augustinian Sisters, another part was the Monastery for Augustinian Brothers, and the third part was a hospital and leprosarium where the Sisters and Brothers cared for the sick. It was there that Juliana devoted herself to working in the hospital to care for lepers (Bradbury, 2011/1873).

When Juliana was sixteen, she began to have visions in which Christ would speak to her (Shapcote, 1877). According to Juliana, Christ told her that a new Christian custom needed to be enacted, a feast in honor of the Blessed Sacrament. Based on these visions, she promoted the addition of what eventually became known as the feast of Corpus Christi (Bradbury, 2011/1873).

The messages Juliana received led her to being branded a visionary, which the church considered heretical (Bradbury, 2011/1873). Additionally, she was accused of mismanaging hospital funds. Because of these accusations, she was forced to leave the Monastery at Mount Cornillon in 1248 (Benedictine Monks et al., 1966). An investigation by the bishop eventually exonerated her, but by then she had taken refuge at the Cistercian nunnery of Salzinnines (Walters, 2007). When the nunnery burnt down, she moved to Fosses where she lived in solitude (Benedictine Monks et al., 1966).

Juliana's extreme fasting, which she claimed was involuntary, continued throughout her life. After receiving holy communion, she preferred to abstain from ordinary food for one month at a time. She would often eat only one small meal per day and claimed to have difficulty swallowing food (Bynum, 1987).

Clare of Assisi

Saint Clare of Assisi was born Chiara Offreduccio in 1194 (Butler, 1956). She was the daughter of a wealthy family in Assisi, a small town in Italy.

In 1212, when Clare was eighteen years old, she heard a sermon by

Saint Francis of Assisi, and was moved to follow the example of the Franciscan Brothers. She ran away from home and joined a convent, but since Saint Francis did not yet have a monastic facility for women, he placed her in the Benedict convent of Saint Paul at Bastia (Delaney, 1980). Her sister Agnes soon joined her but Agnes was bodily removed by 12 armed men sent by her father. On a number of occasions, Clare's father unsuccessfully attempted to have her taken from the convent.

Clare vowed to model the mendicant life of Saint Francis, but she was initially discouraged from doing so because she was a woman (Bynum, 1987). In 1215, Clare moved to a convent at Saint Damiano and was made a superior by Saint Francis (Delaney, 1980). This became part of a newly formed order that was informally known as "Minoresses" or the "Poor Clares" (Butler, 1956). Clare was later joined by her mother and sister (Delaney, 1980).

The Poor Clares devoted themselves to prayer, nursing the sick, and working with the poor. The sisters in Clare's order adopted a life of extreme austerity and absolute poverty, sleeping on twigs, and using patched hemp for blankets (Silver, 2002). They went barefoot at all times and refrained from all unnecessary speech. The Poor Clares fasted often. When they were not fasting, they ate very little, and only what was begged for. Clare made a concerted effort to fast longer than anyone else.

Caroline Walker Bynum (1987) discussed how Clare was a devoted "practitioner of extreme food deprivation" (p. 86). She routinely fasted for three days followed by three days of eating only bread and water (O'Malley, 2000). Every year, Clare would fast for the 40 days prior to Easter and from November 11 to Christmas. Such long fasts, year after year, eventually undermined her health (Bynum, 1987).

Clare's practice of fasting was tied directly to her devotion to Christ. Carol Lee Flinders (1993) described how Clare's love of Christ colored her perspective:

> Claire's life of poverty was not a grim, calculated handing over but rather a joyous, easy, impatient flinging aside; lovers don't feel the cold, lovers don't care what they eat—and Claire was a lover, running full tilt toward her Beloved… . (p. 23)

Clare was so devoted to Christ—and to fasting—that she would sometimes have to be carried to church when her prolonged fasting had made her too weak to walk. For the last 28 years of her life, Clare was continuously in poor health, brought about by intense fasting and poor eating habits (O'Malley, 2000).

On a number of occasions between 1228 and 1247, authorities from the Catholic Church attempted to bestow land and other holdings onto the Poor Clares, which Clare fought adamantly against. In two different papal meetings, one in 1228 with Pope Gregory IX and another in 1247 with Pope Innocent IV, Clare convinced them both to let the order continue in absolute poverty (Delaney, 1980). The second exemption, from Pope Innocent IV, was approved two days before Clare's death.

Elizabeth of Hungary

Saint Elizabeth of Hungary was born in Thuringia in 1207 to King Andrew II, and was the Princess of Hungary, Countess of Thuringia, Germany (Laughlin, 1967a).

When Elizabeth was six, her mother was murdered (Bihl, 1907). Elizabeth's father remarried, and her new stepmother had compulsive eating habits, out of which Elizabeth modeled a habit of excessive fasting (Bynum, 1987).

Elizabeth was married at the age of 14 to Ludwig, the Duke of Thuringia, and they had three children (Bynum, 1987). Elizabeth was constantly fasting during her marriage but would attempt to conceal her fasts with subterfuge, such as deliberately leaving crumbs on her plate.

In 1225, Thuringia experienced a severe famine and Elizabeth spent most of her fortune to provide food for the community (Ghezzi, 2002). In addition to feeding the poor, Elizabeth devoted much of her time and money to caring for lepers.

While Ludwig was begrudgingly tolerant of her efforts to help the poor, he was fully converted one night after a visionary experience in their home. One evening, Elizabeth allowed a leper to sleep in the bed that she and Ludwig normally shared (Ghezzi, 2002). Angrily, her husband ran into the bedroom where the leper slept and pulled back his blankets. However, instead of seeing the leper, he saw a crucified Christ lying on the bed. After that, Ludwig fully backed his wife's work with the sick and the poor.

When Elizabeth was 19, she built a 28-bed hospital for individuals who had the most loathsome diseases (Bihl, 1907). She looked after many of the patients herself, insisting on performing the most revolting duties (Maxwell, 1891). A year later, Ludwig died while off at war. When she heard the news, Elizabeth said, “The world with all its joys is now dead to me” (as cited in Bihl, 1907, p. 389). Soon after, her brother-in-law—who had been upset over how much money she had given to the poor—had her removed from her home for mismanaging the estate (Delaney, 1980).

Under the spiritual direction of Conrad of Marlburg, Elizabeth began living an extremely austere life (Delaney, 1980). According to theologian David Hugh Farmer (1978), “Conrad’s direction seems to have been domineering, severe, and insensitive” (p. 129). Conrad had two people look after Elizabeth who punished her with slaps in the face and blows with a rod.

Elizabeth became one of the first members of the newly-founded Third Order of Saint Francis (Bihl, 1907). She would insist on fasting for weeks at a time while cooking and caring for others (Bynum, 1987). According to Sir William Stirling Maxwell (1891), she “fasted rigidly, rose at midnight to pray, walked in processions barefoot and clad in sackcloth, and maintained a daily table for nine hundred poor” (p. 1025). Elizabeth died when she was 24, her death thought to have been brought about by her rigorous fasting (Farmer, 1978).

Margaret of Hungary

Saint Margaret of Hungary was born in 1242 to King Bela and was the eighth and last daughter of the royal couple (Aldasy, 1907; Mullay, 1967). The family lived in exile in Croatia during the Mongol invasion of Hungary. Her parents vowed that when Hungary was liberated from the Mongols, they would offer Margaret to a religious order. Upon the liberation in 1246, four-year-old Margaret entered the Dominican convent of Veszprém (Aldasy, 1907).

When Margaret was 12, she was transferred to the Convent of the Blessed Virgin founded by her parents on Rabbits’ Island in the Danube near Buda. She spent all her life there, always insisting on performing the dirtiest work in the convent, jobs which were called “menial, repulsive, exhausting, and insanitary” (Butler, 1956, p. 176). Every Thursday, Margaret would wash the feet of the 70 choir nuns using the veil which she wore on her head. She insisted on cleaning the latrines, and would remove and carry the excrement and vomit from seriously ill nuns (Bynum, 1987).

The details of Margaret’s life are documented in *The Legend of Saint Margaret,* written in the fourteenth century by an unknown author. According to the manuscript, Margaret chastised herself from early childhood, wore an iron girdle, hair garments, and shoes spiked with nails (Aldasy, 1907). Margaret was an enthusiastic faster. At the end of every Lent, she was in a pitiable state after having undergone 40 days of fasting, sleep deprivation, seeing visions, and experiencing a complete lack of personal hygiene (Butler, 1956; Delaney, 1980).

When she was living in the convent, Margaret would go to great extents to avoid eating. She frequently covered her face with a cloth when attending meals with the other sisters, and she would often serve them meals, then leave and go to the chapel to pray (Bynum, 1987).

Scholars who have evaluated Margaret’s fasting behavior have suggested she was anorexic, as they have with other fasting saints (Bynum, 1987; Vandereycken & van Deth, 1994). On January 18, 1270, she died at the age of 28 due to complications of an extended fast (Starr, 2007).

Margaret of Cortona

Saint Margaret of Cortona was born in Tuscany in 1247 (Cuthbert, 1907). At the age of seven, Margaret’s mother died, her father remarried, and her stepmother rejected her (Guiley, 2001).

At the age of 17, she met a wealthy young man named Arsenio, became his mistress, and bore him a child (Benedictine Monks et al., 1966). He continually promised to marry her, but never did (Scott, 2006).

Nine years after she went to live with him, Arsenio was killed. One day, after he had been on a journey, his dog returned home without him. Alarmed, Margaret followed the dog into the woods where she found Arsenio’s brutally murdered body (Laughlin, 1967b). Grieving, she took all the gifts he had given her and returned them to his family. She attempted to return to her father’s house, but her stepmother would not allow it (Scott, 2006).

Margaret and her son went to live with the Franciscan friars at Cortona (Scott, 2006). It was there that she began fasting rigorously, avoiding meat and eating only bread and herbs (Cuthbert, 1907).

In her early 20s, Margaret joined the Third Order of Saint Francis and chose to live in poverty (Laughlin, 1967b). Following the example of Saint Francis of Assisi, she subsisted on leftover alms (Butler, 1956). Margaret once said, “I want to die of starvation to satiate the poor” (as cited in Bell, 1985, p. 12). Before she or her son would eat, Margaret would first donate the best of the food to the poor. Based on her example, her son eventually entered the Franciscan Order.

With the help of the city of Cortona, Margaret founded a hospital and took care of the sick (Scott, 2006). To secure nurses for the hospital, she instituted a congregation of sisters, known as “le Poverelle” (Guiley, 2001, p. 218).

Margaret was blessed with supernatural charismata (Benedictine Monks et al., 1966). Beginning when she was 30, Margaret began having visions of Christ, during which he bestowed upon her information about the importance of fasting (Guiley, 2001; Scott, 2006). In one of Margaret’s visions, Christ said to her,

> In this life, Christians cannot be perfect unless they restrain their appetites from vices, for without abstinence from food and drink the war of the flesh will never end; and they feel and suffer most from the rebellion of the flesh who refuse this saving remedy. (as cited in Bynum, 1987, p. 2)

Like many other fasting saints, Margaret was dedicated to long periods of fasting, stopping only briefly for the Eucharist (Bynum, 1987). In addition to frequent fasting, Margaret was known to self-mutilate, once attempting to cut open her face with a razor (Farmer, 1978; Bell, 1985). In 1297, at the age of 50, Margaret starved to death after an extended fast (Lelwica, 2002).

Angela of Foligno

Born into a wealthy family in Foligno, Italy, in 1248, Saint Angela of Foligno married at the age of twenty and had several children (Graef, 1967; Pope Benedict XVI, 2012; Robinson, 1907).

Angela lived a fairly normal life and took part in the social events of the community until 1285, when she had a series of visions. The experience was so traumatic that Angela responded by burning herself (de Jaegher

& Attwater, 2004). In explaining her actions, Angela said, “And I did suffer so greatly that I was constrained to put actual fire upon my body in order that it might quench the burning of desire” (as cited in de Jaegher & Attwater, 2004, p. 23).

Following that mystical experience, Angela became a member of the Franciscan Third Order, waiting for her husband to die before espousing chastity (Bynum, 1987). She gave away her possessions and started a community of tertiaries (lay people who were affiliated with the order) who were devoted to the care of the needy (de Jaegher & Attwater, 2004).

Considered a mystic, Angela was known for conducting long periods of fasting (Bynum, 1987) and claimed to have eaten nothing but the Eucharist for 12 years (Vandereycken & van Deth, 1994). She experienced vivid visions, particularly of the Passion and death of Christ (Delaney, 1980). Theologian John J. Delaney (1980) called Angela “one of the great Christian mystics” (p. 57).

In addition to fasting, Angela was known for other acts of severe asceticism. When caring for lepers, she drank the water she used to wash their sores and when one of the scabs became caught in her throat, she said it was as “sweet as communion” (as cited in Woodward, 2001, p. 170). She was also known to have eaten the scabs and lice from those same patients. Some scholars have suggested that Angela was bulimic and anorexic because she was known to have vomited regularly and to fast to the brink of death (Bynum, 1987).

Catherine of Siena

Saint Catherine of Siena was born in Rome in 1347 as the twenty-third child and twin of an Italian painter (Foster, 1967). Her parents were not particularly religious, but at age seven, Catherine had a vision of Christ and vowed her virginity to him (Foster, 1967).

When Catherine was 15, one of her sisters died in childbirth. Her parents wanted Catherine to marry the widower of her sister to secure the family’s financial status, but Catherine refused. In protest, Catherine responded by undertaking an extended fast and soon lost half of her body weight (Reda, Sacco, & Newman, 2001). Her parents called in a local priest, Don Tommaso of Fonte, to intervene and get Catherine to eat. Tommaso succeeded in getting her to eat one time per day, but she would then vomit most of the food back up. By the age of 16, Catherine was living on raw vegetables, bread, and water (Null & Seaman, 2000).

Catherine was an avid ascetic who partook in severe bodily mortifications and experienced stigmata (Cross & Livingstone, 1997; Schaff, Jackson, & Schaff, 1894). Rudolph Bell (1985) described how Catherine made the voluntary decision to ingest the diseased fluid from a dying woman whom she was nursing. While dressing cancerous breast sores of her patient, Catherine became repulsed by the putrid odor. In order to dispel her earthly disgust and transcend her mortal bias, she gathered the pus from the woman's sores and drank it. Catherine later recounted, "Never in my life have I tasted any food and drink sweeter or more exquisite [than this pus]" (Bynum, 1987, p. 172). Later that night, Catherine had a vision of Christ inviting her to drink from the blood pouring out of his pierced side. After this incident, Catherine claimed she "no longer had need of food and no longer could digest" (Bell, 1985, p. 25). From this point forward, Catherine claimed to have ongoing conversations with Christ and visions of heaven, purgatory, and hell (Gardner, 1907).

This marked the beginning of Catherine's long periods of fasting. She could no longer eat normal foodstuff and instead, "feasted not only on pus but also on the Eucharist" (Bynum, 1987, p. 172). Some scholars have speculated that Catherine was anorexic and bulimic because she was known to force herself to vomit by shoving twigs down her throat (Bell, 1985; Lelwica, 2002). For the last eight years of her life, Catherine ate no food and live solely on the Eucharist (Vandereycken & van Deth, 1994). In addition to fasting, Catherine would partake in self-flagellation and sleep deprivation (Null & Seaman, 2000).

During this period, the Catholic Church discouraged extreme fasting. In 1373, a clergyman sent Catherine a letter asking her to eat and thus break her fast (as cited in Vandereycken & van Deth, 1994, p. 25). Catherine's response was that her fasting was a medical condition as opposed to a voluntary religious practice (de Vineis, 2009).

For the last three months of her life, she lived in isolation and consumed only small amounts of water (Reda et al., 2001). Although she died of a stroke at the age of 33 (Farmer, 1978), her death was attributed to starvation that was brought about by her prolonged fasting (Bynum, 1987).

Lidwina of Schiedam

Saint Lidwina of Schiedam was born in 1380 to a poor Dutch family (Albers, 1907). At age 15, Lidwina fell and broke a rib while ice skating with her friends. The wound that was caused by the fall did not heal, and gangrene spread over much of her body. She never recovered from the fall and eventually became paralyzed (Bynum, 1987).

Historians have suggested that Lidwina was afflicted with multiple sclerosis, based on the characteristics and onset of her illness (Medaer, 1979). For example, soon after her fall, she developed walking difficulties, headaches, and violent pains in her teeth. Over the next 34 years, Lidwina’s condition gradually deteriorated.

After her fall, Lidwina acquired fame as a holy woman and healer (Albers, 1907). She fasted continually during the 28 years she was bedridden, rarely slept, and was often found in a state of ecstasy (Bynum, 1987; Vandereycken & van Deth, 1994). She had a variety of paranormal experiences, including having visions of Christ and stigmata (Albers, 1907).

Lidwina claimed to have the gift of bilocation; the ability to be in more than one place at the same time (Albrecht, 2006). The term has been used in a wide range of historical and philosophical systems, including early Greek philosophy, shamanism, the paranormal, and numerous religions and branches of mysticism (Heath, 2003; McGovern, 2007). On one occasion, Lidwina said Jesus had taken her to Golgotha, the place where he was crucified (Albrecht, 2006). Witnesses claimed that—although Lidwina had not left her bed—there suddenly appeared ulcers on her lips, wounds on her arms, marks of thorns on her forehead, and splinters in her arms.

The town officials of Schiedam, her hometown, created a document attesting to her complete lack of food and sleep (Bynum, 1987). The document stated that Lidwina shed skin, bones, and intestines, which her parents kept in a vase on a mantle, and which gave off a sweet odor. These items attracted so much attention that Lidwina asked her mother to discard them (Bynum, 1987).

Catherine of Genoa

Saint Catherine of Genoa was born Caterina Fieschi in 1447, the youngest of five children (Capes, 1907). She was an Italian mystic best known for her “mystico-prophetical works” (Schaff, Jackson, & Schaff, 1894, p. 421).

When she was 13, she attempted to enter a convent, but the nuns would not accept her (Capes, 1907). At 16, Catherine was married by arrangement to Giuliano Adorno, who she soon discovered was unfaithful and a spendthrift (Farmer, 1978).

In 1473, when Catherine was 26, she had a mystical experience while in the midst of a confession with a priest (Hug, 1967). After this event, she dedicated her life to social work, going into Genoa’s slums to help the sick and poor. Four years later, her husband was converted and began working with her. Although Giuliano later became a Franciscan tertiary, Catherine was never associated with a religious order. In 1479, the couple moved into a rooming house near the large Pammatone Hospital for the poor in Genoa and worked there, without pay.

Beginning around 1487, Catherine became unable to eat during the 40 days of Lent (Bell, 1985). While this continued for the next 23 years, she would work just as strenuously during her fasts. At times, she would try to force herself to eat after a long fast, but she would vomit up whatever she ate. This behavior continued to the point in which she damaged her throat and digestive system (Bynum, 1987). In regard to Catherine’s fasting behavior, P. L. Hug (1967) said the following:

> It was marked by frequent ecstatic absorptions and by long, mysterious fasts, during which she was unable to take food—apparently an operation of God in which (as she said) her will had no part and to which she attached no great significance. (p. 255)

By 1490, Catherine was the director of the Pammatone hospital and remained there through the plague of 1493, during which time 80% of the residents of Genoa perished, and she nearly died, too (Farmer, 1978; McGinn, 2006). In a similar manner as Catherine of Siena over one hundred years earlier, Catherine of Genoa would ingest the filth from the sick people whom she tended to (Bynum, 1987).

Catherine had various contemplative and visionary experiences (Farmer, 1978). She developed numerous theories, such as her thoughts on purgatory, which have been studied extensively by theologians (Hug, 1967). In addition, she advanced a transpersonal theory that a person could transcend the ego simply be eliminating the first-person-singular pronoun from his or her speech (Bynum, 1987).

Columba of Rieti

Saint Columba of Rieti was born Angelella Guadagnoli in 1467 (Finnegan, 1967). Her name was changed to Columba when a dove flew above her head at her christening. She was suspected of being anorexic, partially because she began fasting as an adolescent (Bell, 1985). By the age of 18, she was dedicated to fasting for at least 45 consecutive days once per year. In addition to her long fasts, Columba performed acts of self-mortification, such as self-mutilation (Bell, 1985).

When Columba was 21, she ran away from her home. On her journey, three men attempted to assault her. After removing her clothes, the men were shocked to see that she was wearing ascetic accoutrements, specifically a hair shirt, a thick iron belt, and spiked whipping chains that wrapped around her neck and breasts cutting into her body (Bell, 1985). According to Rudolph Bell,

> The sight of her instruments of atrocious self-punishment and of her body scarred with whippings quickly cooled their lust and the two young rapists ran off while the older man fell to his knees and asked her prayers for his dead wife and his daughter. (p. 154)

At 23, she founded the convent of Saint Catherine, influenced by her devotion to Saint Catherine of Siena. In addition to fasting, Columba was known to self-induce vomiting, which she claimed helped to relieve her of evil spirits (Lipsedge, 1996). Furthermore, she would cover her face in the presence of food and refuse to take part in communal meals (Brumberg, 1988).

Columba attracted a great deal of attention because of her visions, prophecies, reported miracles, and her ability to heal the sick (Delaney, 1980). While some believed in Columba’s abilities, others called her insane or accused her of being in league with the devil (Bell, 1985). Columba herself was said to have feared that her Eucharist fasting and other acts of asceticism were caused by the devil (Bynum, 1987). At one point, the Catholic Church ordered Columba to cease her excessive fasting, investigated her on charges of sorcery, and informed her that she was a disgrace and was going to hell (Bell, 1985; Bynum, 1987). The magistrates of Perugia had a much higher opinion of Columba and would often seek her advice (Benedictine Monks et al., 1966). After she was beatified in 1627, devotees began invoking Columba as protection against sorcery and temptation (Jones, 2012).

When Columba was dying, the local magistrates visited her. The expenses for her funeral were paid for by the city of Perugia (Finnegan, 1967). After Columba died, an autopsy was performed and it was determined that she had died due to self-starvation (Bell, 1985; Bynum, 1987).

Domenica of Paradiso

Saint Domenica dal Paradiso was a mystic who was born in 1473 in the Florentine town of Paradiso and grew up the daughter of a farm-laborer (Benjamin, 2006). She was the fifth of seven children, was left fatherless at the age of six, and was faced with economic hardships and difficult farm work (Bell, 1985). Her mother neglected Domenica, and she received little affection (Verbillion, 1967).

She was heavily influenced by Savonarola, a Dominican monk and religious zealot who was burned at the stake in the Piazza della Signoria in Florence near her home (Benjamin, 2006). Moved by Savonarola's message of mysticism and extreme religiosity, Domenica became a nun at 25 and eventually established a convent for nuns in the Dominican reform of Savonarola (Bell, 1985; Benjamin, 2006; Verbillion, 1967).

When Domenica first began fasting, she would fast for 3 to 40 days (Bell, 1985). In between fasting, she consumed only herbs, tubers, small bits of fruit, and plain water, and she always ate on her knees while praying. She would often throw up the food she ate, vomiting to the point that her teeth became rotten and fell out (Bell, 1985). Eventually, Domenica stopped eating altogether and fasted for the last 20 years of her life, eating only the Eucharist (Bynum, 1987; Vandereycken & van Deth, 1994).

Domenica claimed to have numerous visions, including apparitions of Columbia Rieti ascending to heaven (Verbillion, 1967) and others of God (Herzig, 2008). In addition to fasting and experiencing visions, Domenica self-flagellated (Lipsedge, 1996) and bore the marks of stigmata (Hynek & Sheppard, 1932). At one point, the Catholic Church brought her up on charges of witchcraft and suspected heresy. She was placed under the care and direction of a local vicar who was told to "correct her and restore her mental health" (as cited in Bell, 1985, p. 166).

Nicholas of Flue

Saint Nicholas of Flue, born in 1417, was a Swiss hermit and ascetic who is the patron saint of Switzerland (Cruz, 1987). He was born into a family of wealthy peasants (Boos, 1999). At the age of 21, he entered the military and fought the battle of Ragas (Ott, 1907). Around the age of 25, he married a farmer's daughter and had five sons and five daughters (Ott, 1907). After leaving the army, he had a successful career as a lawyer and a judge (Boos, 1967).

Around 1467, Nicholas received a mystical vision, and decided to devote himself entirely to the contemplative life (Collins, 2008). With his wife's consent, he left her and their ten children and began living as a hermit (Collins, 2008). Nicholas was known for his extensive fasting and he claimed to have survived for 20 years with no food except for the Eucharist (Bynum, 1987; Vandereycken & van Deth, 1994). His reputation for wisdom and piety was such that figures from across Europe came to seek advice from him, and he was known to all as "Brother Klaus" (Yates, 1989). When Nicholas died in 1487, he was surrounded by his wife and children.

In 1951, Carl Jung published a paper suggesting that Nicholas had been able to live without food because he received a mysterious infusion of albumin from other people (as cited in Vandereycken & van Deth, 1994, p. 108). Albumin is the main protein in human blood.

In addition to Nicholas, there were numerous other holy men who engaged in fasting. Peter of Luxembourg (d. 1386) and James Oldo (d. 1404) both attempted long fasts but ceased when they were told to do so by their superiors (Bynum, 1987; Counihan & Van Esterik, 2007). Other examples include Aelred of Rievaulx (d. 1167) who was said to have fasted intermittently for over one year, Facio of Cremona (d. 1272) who dry fasted for 72 days, and John Beret (d. 1463) who died imitating Jesus' fast of 40 days (Bynum, 1987; Mursell, 2001). Saint Francis of Assisi (d. 1226) also emulated Jesus' fast, but he stopped at 39 days out of fear that he might be tempted to think he was as holy as Jesus (Howell, 2009). German mystic Henry Suso (d. 1366), John the Good of Mantua (d. 1249), and Peter of Luxembourg (d. 1386) all fasted to the point of wrecking their digestion but made it clear that they never quit eating entirely nor lost their desire for food (Counihan & Van Esterik, 2007; Mursell, 2001).

Acknowledgement of a desire to eat may have been one of the more prominent differences between the fasting habits of male and female mystics. In the book *Starving for Salvation: The Spiritual Dimensions of Eating Problems Among American Girls and Women,* Michelle Mary Lelwica (2002) said the following when comparing the asceticism of male and female holy figures:

> Medieval Christian holy men also practiced asceticism, but fasting for them was merely one of several forms of renunciation (alongside poverty, chastity, and mortification of the flesh). For medieval women, hunger, food, fasting, and feeding were *the* central means and metaphors for becoming one with Christ's sufferings, for achieving holiness, and for saving souls. (p. 27)

There were few male saints who were as extreme food ascetics as their female contemporaries. Suso was among the most dedicated to intense fasting, primarily because he modeled his practices after those of the female saints (Bynum, 1987). However, he never developed the distaste for food so often expressed by his female counterparts.

Conclusion

A recurring theme in Catholicism is the idea of the saint or holy person suffering in ecstasy. After suffering through severe ascetic activities such as self-mutilation, self-flagellation, sleep deprivation, and prolonged fasting, the devotee would often reach an ecstatic state that included visions and a direct experience of the divine. The ecstasy of the visionary experience became addictive, hence the need for continued and escalating austerities. The compulsive quality of their behavior strengthens the argument that these historical figures exhibited numerous characteristics of one or more eating disorders.

For some, the quest for ecstasy and perfection was driven by the idea that being thin was equated with a worthiness of God's grace. In the epilogue of Rudolph Bell's *Holy Anorexia,* psychologist William N. Davis made the observation that thinness and holiness are often seen as the same thing in the minds of the holy and the anorexic:

> The relationship between holy anorexia and anorexia nervosa with regard to internal needs and desires deserves special emphasis. Holy anorectics detested their bodily desires and were terrified at the possibility of their unbidden appearance. In order to be holy it was necessary to have no needs, be they sexual, narcissistic, or nutritional. The sine qua non for holiness was purity, and so attractive men, or opportunities to be selfish, or food had to be obsessively avoided. It is here that there is an explicit connection between holiness and starvation. The avoidance of food is part of the path to saintliness. Modern-day anorectics are just as suspicious of their bodies, and just as frightened that they will suddenly be betrayed by their bodily needs. Food and desire to eat are paramount, but all primary anorectics are also repulsed by sexuality and disgusted by selfishness. The notion of bodily purity and cleanliness is just as significant for them as it was for holy anorectics. Thinness means the absence of desire just as surely as it means emaciation. (Davis, 1985, p. 182)

In addition to the women discussed here, there were many others who exhibited anorexic-like behaviors. Rudolph Bell (1985) offered up a long history of saints and holy figures who appeared anorexic, including Joan of Arc, Teresa of Avila, and Umiliana de’ Cerchi. In his book *Fasting: The Phenomenon of Self-Denial,* Eric N. Rogers (1976) provided a record of female fasting figures, including Monica Mutcheteria, Katerin Binder, and Louise Lateau. Caroline Walker Bynum (1987) had her own lengthy list of women who were “unable to eat normally,” including Elizabeth of Reute, Ida of Louvain, Ida of Leau, Elizabeth of Spalbeel, Margeret of Ypres, Jane Mary of Maille, and Elsbet Achler of Reute.

One common theme that emerged with the mystics and Catholic saints was a tendency to control their suffering by being the direct cause of it. By choosing poverty, semi-isolation, and self-mortification, many of them turned their backs on the mundane world in favor of an inner world that was ruled by self-punishing behaviors. From this perspective, it becomes easier to understand why scholars have suggested that these saints and other ascetics demonstrated signs of eating disorders and other assorted pathologies.

12

Fasting, Eating Disorders, and Food Addiction

Those who, satiety drove from paradise, fasting restores.

—SAINT JEROME (as cited in Manlowe, 1995, p. 85) Almost all eating disorder sufferers participate in the practice of fasting, using it to manage their weight and to gain a greater sense of control. The anorectic tends to have the most extreme fasting practices, whereas the bulimic usually fasts for shorter periods. The fasting that occurs among binge eaters and food addicts is typically sporadic, with some individuals fasting more often than others.

The most commonly used treatment for eating disorders is psychotherapy, coupled with special attention to medical and nutritional needs (American Psychiatric Association, [APA], 2006). For a psychotherapist who treats someone with an eating disorder, having a thorough understanding of the practice of fasting should be a required standard of care. Without this knowledge, it becomes more difficult to decipher the patient's motivations and defense mechanisms that pertain to fasting. Regarding anorectics who have abused fasting to the brink of death, examining their bond with fasting in psychotherapy—much in the same way an alcoholic does with alcohol—could play an important role in recovery.

For patients who have not abused the practice of fasting, as is often the case with food addicts and compulsive overeaters, therapeutic fasting may represent a beneficial method in which to reframe an unhealthy relationship with food. Additionally, fasting may help to remove some of the physical effects of overeating. Mohandas Gandhi (2004) spoke of the healing potential of fasting when he said, "The body is injured every time that one overeats, and the injury can be partially repaired only by fasting" (p. 157).

Using fasting to treat an eating disorder may seem like a radical idea, but revolutionary action may be what is needed to win the battle against eating disorders, a group of psychiatric disorders with the highest mortality rate at 5.6% (Weiselberg, Gonzalez, & Fisher, 2011) and whose research is grossly underfunded (U.S. Department of Health & Human Services [USDHHS], 2011). Individuals who have eating disorders have the highest risk of premature death (from both natural and unnatural causes) compared to other psychiatric disorders.

Categories of Eating Disorders

In the broadest sense, the term *eating disorders* refers to a group of conditions defined by abnormal eating habits that involves either insufficient or excessive food intake to the detriment of an individual’s physical, mental, and spiritual health (Treasure, Claudino, & Zucker, 2010).

The most common types of eating disorders—anorexia nervosa and bulimia nervosa—are outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (APA, 2000a) and the *International Classification of Diseases* (ICD-10) (World Health Organization [WHO], 1992). With regard to anorexia nervosa, one of the key diagnostic criteria is insufficient weight, which the anorectic achieves through dieting and excessive fasting (APA, 2000b). Bulimia nervosa is an illness in which a person binges on food and then uses various methods—such as vomiting, laxatives, and fasting—to prevent weight gain (APA, 2006).

To be diagnosed with an eating disorder, an individual must meet the criteria listed in the DSM-IV (2003a) or the ICD-10 (WHO, 1992). Disordered eating, on the other hand, is a term that describes the spectrum of abnormal and harmful eating behaviors that are used in a misguided attempt to either lose weight or maintain an abnormally low or unhealthy body weight (Lombardo, Cuzzolaro, Vetrone, Mallia, & Violani, 2011). The obesity epidemic in the United States has had numerous implications, including the perception that Americans have difficulty controlling their food intake. Bernhard Muller (2010), a German author, said, “Today in the Western world it is definitely easier for people to die from overeating than from starvation” (p. 33).

Our relationship with food is a complex neurobiological, behavioral, and cultural phenomenon. When this dynamic backfires and we depend on feasting or fasting in an unhealthy way, the stage is set for an eating disorder. The following sections provide some preliminary information on the background and diagnostic criteria of the aforementioned types of eating disorders and their relationship to fasting.

Bulimia Nervosa Bulimia nervosa involves a recurring, emotionally driven cycle of compulsive consumption of large quantities of high-calorie food over a short period of time, followed by either induced vomiting or other compensating behaviors (Mitchell, 1990). Bulimics use various methods to purge, such as laxatives, drugs that induce vomiting, diuretics, excessive exercise, and fasting (Agras & Apple, 2007).

Bulimia nervosa can be difficult to detect, as compared to anorexia nervosa, because bulimics tend to be of average (or slightly above or below average) weight (Kiss, 2000). Furthermore, some individuals engage in significantly disordered eating and exercise patterns without meeting the full diagnostic criteria for bulimia nervosa (Walsh, Wheat, & Freund, 2000).

The diagnostic criteria that is utilized the DSM-IV for bulimia nervosa includes repetitive episodes of binge eating (a discrete episode of overeating during which the individual feels out of control) compensated for by excessive or inappropriate measures taken to avoid weight gain (APA, 2000a). The diagnosis is made only when the behavior is not a symptom of anorexia nervosa and when the behavior reflects an overemphasis on physical appearance or body mass. There are two subtypes of bulimia nervosa: 1. Purging type bulimics, who self-induce vomiting (usually by triggering the gag reflex or ingesting emetics) to rapidly remove food from the body before it can be digested, or utilize laxatives, diuretics, or enemas.

2. Nonpurging type bulimics (approximately 6% to 8% of cases) who exercise or fast excessively after a binge to offset caloric intake. (Mitchell & Crow, 2006) Purging-type bulimics may also exercise or fast, but as a secondary form of weight control. For the bulimic, fasting is part of a vicious cycle that is divided into three stages: 1) binging, 2) compensation, and 3) dietary restriction, usually in the form of fasting (Fairburn, Cooper, Doll, Norman, & O’Connor, 2000). After gorging on high-calorie foods, the bulimic is driven to compensate for overeating. This compensation stage is what distinguishes the two subtypes of bulimia.

When the bulimic fasts, it is usually not planned for a specific length of time, but the fast always has an anorexic quality to it in that the goal is to control weight (Santonastaso, Zanetti, De Antoni, Tenconi, & Favaro, 2006). This explains why so many anorectics are or were previously bulimics (Garner, Garner, & Rosen, 1993).

Research has indicated that bulimics tend to have specific fasting patterns. For example, bulimics have a tendency not to eat for the rest of the day after a binge. Furthermore, fasting for more than 24 hours is uncommon (Agras & Apple, 2007). After the fast is over, binging begins again, and the cycle ultimately repeats itself.

Anorexia Nervosa Of all the eating disorders and disordered patterns of eating, none is so closely related to fasting as anorexia nervosa. An estimated 14% of U.S. adults have admitted using fasting as a means to control their weight (Johnstone, 2007). It seems safe to assume that a percentage of this number have this disorder, compulsively fasting to drop weight they can’t afford to lose.

Anorexia nervosa has one of the highest overall mortality rates and the highest suicide rate of any psychiatric disorder. The risk of death is 3 times higher than in depression, schizophrenia, or alcoholism, and 12 times higher than in the general population (Weiselberg, Gonzalez, & Fisher, 2011). Around 10% of women who have anorexia nervosa die due to anorexia-related causes, mainly from suicide or from complications secondary to starvation (Treasure, Claudino, & Zucker, 2010).

Anorectics use fasting to control their weight. However, what anorectics call fasting eventually turns into starvation once their bodies begin to metabolize essential tissue for fuel and this continues over an extended period of time (Keys, Brozek, Henschel, Mickelsen, & Taylor, 1950). This reliance on essential tissue, such as heart tissue, is what determines when starvation is occurring rather than fasting.

It is significant that the anorectic cannot differentiate fasting from starvation. This is largely to the fact that anorectics almost always suffer from body dysmorphic disorder, meaning that no matter how thin they get, they look at their reflection in the mirror and see themselves as being considerably larger then they really are (Aleong, Duchesne, & Paus, 2007; APA, 2000b). Research has shown that body dissatisfaction predicts the use of extreme weight loss behaviors, such as calorie restriction, purging, and excessive fasting (Neumark-Sztainer, Paxton, Hanman, Haines, & Story, 2006).

The anorectic generally engages in starving or restricted eating to the point of becoming malnourished and developing nutrient deficiencies (Aleong, Duchesne, & Paus, 2007; Herrin, 2002; Rock & Vasantharajan, 1995). However, it is important to note that the anorexic often has a religious or spiritual justification for fasting, in addition to weight loss. According to Gail Corrington (1986), Not only is there a strong resemblance between traditional descriptions of female asceticism, especially where it involves fasting, and the extreme form of fasting referred to as anorexia nervosa, but the two are frequently connected in accounts of holy ascetic women of the patristic, medieval, and even modern periods. Further, anorexia is described by anorectics them selves as a form of askesis, a discipline of the body for the sake of a “higher purpose.” Like asceticism, anorexia is a form of control. It enables women to resist the prevailing values of societies which they do not control, while at the same time making them acceptable to those societies. (p. 52) The following are key diagnostic features for anorexia nervosa, guidelines that mental health professionals follow in order to make a formal diagnosis: 1. Self imposed weight loss due to dieting, vomiting, or other means [fasting] leading to less than 85% of expected weight or a body mass index of less than 17.5.

2. Abnormal attitudes to food and weight. Preoccupation with the desire to be thinner. Feeling fat even though underweight.
3. Endocrine disturbance. Loss of libido and menstrual periods in females. (APA, 2000b, brackets added) The DSM-IV differentiates between two subtypes of anorexia nervosa (APA, 2000a). The first, *restricting type,* denotes individuals who lose weight primarily by reducing their overall food intake through dieting, fasting, and/or exercising excessively. The second type, *binge-eating/purging type,* describes those who regularly binge (consume large amounts of food over short periods of time), and purge through self-induced vomiting, excessive exercise, fasting, the abuse of diuretics, laxatives, and/or enemas (Goldstein, 2005; Mitchell & Crow, 2006). An estimated one-third to one-half of anorectics develop bulimia (Garner, Garner, & Rosen, 1993).

The History of Anorexia Nervosa There is a long history of women who practiced anorexic behaviors. The first description of anorexia nervosa appeared in the literature over three hundred years ago (Weiselberg, Gonzalez, & Fisher, 2011). The history of anorexia nervosa began with descriptions of religious fasting dating from the Hellenistic era (Pearce, 2004). As discussed previously, some scholars believe that many well-known historical figures, such as Catherine of Siena and Mary, Queen of Scots, were anorectics (Hepworth, 1999; McSherry, 1985).

The earliest medical descriptions of anorexic illnesses are generally credited to the English physician Richard Morton, in 1689 (Pearce, 2004). However, it was not until the late nineteenth century that anorexia nervosa became widely accepted by the medical profession as a recognized condition.

An English dictionary from 1865 defined anorexia as “an absence of appetite” and specified that the condition was not accompanied by the dislike of food (as cited in Sonenklar, 2011, p. 15). In 1873, Sir William Gull, one of Queen Victoria’s personal physicians, published a paper which used the term *anorexia nervosa* and provided a number of detailed case descriptions and treatments. In the same year, French physician Ernest-Charles Lasègue published *De l’Anorexie Histerique,* an article that detailed a number of cases of anorexia nervosa (Vandereycken &

van Deth, 1994).

Although the medical facts of anorexia nervosa have been well-documented since the 1870s, public awareness of the condition was limited until the second half of the twentieth century (Keel & Klump, 2003). The concept of obsession with body image as a motivating factor for excessive fasting did not emerge until the mid-1960s, and it was not until 1980 that body image disturbance was formally included as a diagnostic criterion in the DSM-IV (APA, 2000a).

Through much of the twentieth century, doctors and lay people understood little about anorexia. In a 1976 *Cosmopolitan* article entitled *Fasting: The Ultimate Diet,* physician Alan Cott told readers—a predominantly female audience—how to lose weight using water-only fasting. Cott advocated fasting with friends and said, “Join in friendly competition to see who is doing better on the scales” and, “Stand in front of long mirrors, gazing in wonder” (Cott, 1976, p. 142). Such recommendations would become standard practice among anorexics.

If the medical community was unaware, the public knew even less. This all changed when German-American psychoanalyst Hilde Bruch (1978) published her popular work *The Golden Cage: the Enigma of Anorexia Nervosa.* Although Bruch’s book created a wider awareness of anorexia nervosa, it was the famous singer Karen Carpenter’s death from the disease in 1983 that prompted widespread media coverage of eating disorders. In 1988, Bruch wrote *Eating Disorders: Obesity, Anorexia Nervosa, and the Person Within,* a book in which she discussed the history of fasting in hunger striking and religion. Although other eating disorder experts have written on the historical and cultural aspects of fasting, the topic has been largely ignored by mental health professionals.

The Fasting Catholic Saints By the thirteenth century, it was increasingly common for women to participate in religious life and be named saints by the Catholic Church (Brumberg, 1988; Vandereycken & van Deth, 1994). As discussed in chapter 11, many women who eventually became saints engaged in self-starvation to the point that is was a common phenomenon among them (Vandereycken & van Deth, 1994). Some scholars have suggested that excessive fasting gave these women power. Christina von Braun (2007) elaborated on this perspective: In early Christianity itself, renunciation of nourishment symbolized victory over corporality and sexuality. For women, fasting has a particular meaning. It expresses autonomy, withdrawal from community, and an intimate connection with the ambivalent community symbolism of the female→body. (p. 720) In an effort to draw conclusions about the saint’s fasting activities experts have referred to their behavior as *anorexia mirabilis,* which means “miraculous lack of appetite” (Tobias, 2007, p. 204) and *inedia prodigiosa,* which means “prodigious fasting” (Brumberg, 1988, p. 55). This discussion has led a number authors to suggest that the saints were anorexic. Additionally, it has created a debate as to whether or not it is appropriate to apply a modern diagnosis in retrospect. Some have argued that there is historical continuity between the conditions (Bell, 1985), while others maintain that the Catholic saint’s fasting should be comprehended as a distinct medieval form of female religious piety within the historical context of such societies (Bynum, 1987).

Caroline Walker Bynum (1987) said that an investigation of the medieval saints can be interpreted as support for either side and a final conclusion as to whether the saints were anorexic cannot be drawn. Bynum believed that the twentieth Century definition of anorexia nervosa should not be applied to the saints because of the radically different historical contexts. Joan J. Brumberg, another historian and authority on the matter, said it is the cultural context around fasting that constitutes its meaning. Brumberg (1988) said, “In order to understand fully the long tradition of female food refusal one must do more than merely lay on psychological constructs drawn from modern life or search out look-alike symptoms” (p. 45). Whether or not there is a pathological similarity between anorexia nervosa and the fasting of the female saints will most likely continue to be debated.

Anorexia Nervosa in the Twenty-first Century Medical professionals who treat eating disorders have long noted that patients who are in recovery programs tend to gravitate toward other patients who have the same symptoms, banding closely together for emotional support and validation (Bardone-Cone & Cass, 2007). Anorectics appear to collectively normalize their condition and defend it. They deny that their condition is an illness, claiming instead that is an accomplishment of self control and a part of their identity (Levenkron, 2001).

In the 1990s, websites began to appear that supported and promoted the negative behaviors that are associated with eating disorders. These websites, dubbed *pro eating disorder,* were primarily pro-bulimia and pro-anorexia; or *pro-mia* and *pro-ana* for short (Brotsky & Giles, 2007; Csipke & Horne, 2007).

Members of pro-ana support groups shared information on how to fast from a variety of perspectives including socially acceptable pretexts for refusing food, how to break a fast, and ways to suppress hunger (Borzekowski, Schenk, Wilson, & Peebles, 2010). Additionally, they would often fast together in displays of solidarity (Norris, Boydell, Pinhas, & Katzman, 2006).

Pro-ana organizations differ widely in their stances. Most claim that they exist mainly as a non-judgmental environment for anorectics; a place to discuss their illness, and to support those who choose to be in recovery (Chesley, Alberts, Klein, & Kreipe, 2003). Others deny anorexia nervosa is a mental illness and claim instead that it is a lifestyle choice that should be respected by their doctors and family members (Harper, Sperry, & Thompson, 2008).

Pro-ana websites proliferated rapidly on the internet, with some observers noting a first wave of websites on free web hosting services in the late 1990s, and a second wave attributed to the rise of blogging and social networking services in the mid 2000s (Wilson, Peebles, Hardy, & Litt, 2006). A 2008 survey found a 470% increase in pro-ana and pro-mia sites from 2006 to 2008 (Optenet, 2008). By comparison, pro-drug websites only increased by 62%. In a 2009 survey of 711 Flemish high school students aged 13 to 17, 12.6% of girls and 5.9% of boys reported having visited pro-ana websites at least once (Custers & Van den Bulck, 2009).

Curiosity aside, research indicated that visitors to pro-ana websites included a significant number of those who were already diagnosed with eating disorders (Wilson et al., 2006). A 2006 survey of eating disorder patients at Stanford Medical School found that 35.5% had visited pro-ana websites; of those, 96.0% learned new weight loss or purging methods from such sites (Wilson et al., 2006).

Beginning around 2001, social networking services began making a combined effort at removing pro-ana websites (Holahan, 2001). Since then, Yahoo, Facebook, and Microsoft have all made attempts at removing pro-ana content (Holahan, 2001; Peng, 2008). Additionally, numerous countries have passed laws making the promotion of pro-ana websites illegal (Schwartz, 2009). In France, for example, a bill was passed in 2008 outlawing material which “provokes a person to seek excessive thinness by encouraging prolonged restriction of nourishment” (Schwartz, 2009). Violators faced a fine of 30,000 (around $40,000) and two years of imprisonment.

Perhaps the biggest impedance in discouraging pro-ana organizations is the perceived support that they receive from celebrities. Anorectics and others may erroneously believe that scarily-thin celebrities are in support of starving oneself. Furthermore, some celebrities make comments that appear to be in support of pro-ana activities. For example, in 2009, supermodel Kate Moss was quoted in the *New York Times* as saying, “Nothing tastes as good as skinny feels” (as cited in Costello, 2009, ¶6). Her quote became a mantra for pro-ana groups.

Fasting and Anorexia A common myth is that anorectics fast in order to lose weight or to maintain weight loss (Garner & Gerborg, 2004). Although this may appear to be a logical conclusion, the motivation behind anorexic fasting is actually far more complex. Hunger has a different meaning to an anorectic. After several lengthy periods of fasting, many anorectics no longer have a normal hunger response (Garner & Gerborg, 2004; Mogul, 1980).

While fasting rarely leads to anorexia per se, it can set into motion a set of behaviors and schemas about food and body image that can place a person at a greater risk of developing anorexia (Levine & Smolak, 2006; Maine & Kelly, 2005). However, anorexia nervosa is not simply a product of dieting or fasting, but is determined by a complex set of variables such as family dynamics, other psychiatric issues, genetics, and temperament and personality factors (De la Rie, Noordenbox, & van Furth, 2005; Hudson, Hiripi, Pope, & Kessler, 2007).

The association between anorexia and asceticism has been noted by numerous eating disorder experts (Bemporad & Ratey, 1985; Bruch, 1978; Buser & Woodford, 2010; Crisp, 1995; Gordon, 2000; Huline-Dickens, 2000; Mogul, 1980; Palazzoli, 1974; Rampling, 1985; Sabom, 1985). A dialogue has arisen regarding the association between the anorectic's religious beliefs, and the concepts of self-denial, asexuality, heightened sense of idealism, and renunciation of the body.

Self-Denial, Renunciation, and Transformation Just as medieval martyrs used fasting to demonstrate religious devotion, the modern anorectic fasts to show dedication to one or more personal causes. Such causes can include weight loss, improved health, and religious or spiritual beliefs. The anorectic uses fasting as an active self-restraint and discipline in the same manner that the ascetic practices rigorous self-denial. The discipline takes on spiritual characteristics as the anorectic attempts to undergo a bodily transformation. At this juncture, severe self-denial is maintained by holding a vision of the idealized self. According to Gail Corrington (1986), Both ascetics and anorectics strive for perfection… Striving towards the ascetic image is a source of satisfaction, and a source of liberation from imprisonment of the body (or from its definition by others) and its bondage to an unacceptable world.

In both cases, askesis [asceticism] is not experienced as self-destructive, but as self-liberating. (p. 61, brackets added) Michelle Mary Lelwica (2002) described how someone with an eating disorder is, in some manner, seeking a spiritual experience (p. 109). Lelwica said, "Sometimes the terms and strategies through which the anorectic and bulimic women seek a transcendent source of power explicitly reference the models and tactics of traditional religion" (p. 109). Fasting, she said, is a way for any woman to experience "supernatural power" (p. 109). For the woman who feels she has no power in her life, it's easy to understand how fasting could make her feel as though she has some control over the fate of her life. In her book, *The Art of Starvation: A Story of Anorexia and Survival,* Sheila MacLeod (1987) detailed the deeply transformational power of anorexic fasting, "The clearer the outline of my skeleton became, the more I felt my true self to be emerging, like a nude statue being gradually hewn from some amorphous block of stone" (p. 69).

Many anorectics use their religious beliefs to justify extreme fasting, using some of the same rationalizations of the ascetic (MacLeod, 1987). The religious anorectic and the ascetic have similar goals, such as: ➢ Drawing closer to Divinity ➢Becoming more God-like ➢Becoming more worthy of Grace ➢Weakening the body in order to reduce or eliminate human appetites Psychologists have suggested that the religious and spiritual beliefs of the anorectic should be thoroughly examined and taken into consideration in the development of a treatment plan (Banks, 1992; Marsden, Kargianni, & Morgan, 2007; Mitchell, Erlander, Pyle, & Fletcher, 1990; Morgan, Marsden, & Lacey, 2000; Richards, Hardman, & Berrett, 2007). In her article *Anorexia Nervosa: Some Connections With The Religious Attitude,* Sarah Huline-Dickens (2000) noted, It is argued that there exist many connections between the religious ascetic and the anorexic and that there are many psychopathological features common to both. Both anorexia and asceticism are considered to be connected conceptually in the process of idealization. (p. 67) Health professionals have demonstrated an understanding of the importance of assessing fasting behavior in anorexic patients. According to Pamela K. Keel and Laurie McCormick (2011), the treatment of anorexia should contain an assessment of related features such as the “Presence of nonpurging weight control behaviors such as frequency, period, and intensity of fasting…” (p. 10).

There is a saying amongst mental health professionals, “You’re only as sick as your secrets” (as cited in Temm, 2010, front cover). This statement is based on the belief that holding onto secrets—as opposed to revealing them in a safe setting such as during psychotherapy—can potentially impede a patient’s recovery. According to this concept, when someone reveals his or her darkest secrets in individual or group therapy, a cathartic release occurs. This can be particularly powerful in group therapy when the patient finds out that everyone else in the group has had the same secret in common.

Virtually every recovering anorectic has had a close relationship with fasting. If a therapist lacks a thorough understanding of fasting from spiritual, psychological, and medical perspectives, he or she could unintentionally allow the anorectic to keep aspects of their relationship with fasting a secret. Imagine the therapy session in this way: the anorexic patient is describing a personal experience about fasting, but it becomes clear to the patient that the therapist has only a peripheral understanding of fasting. In this example, the anorectic becomes the expert in the therapeutic relationship on a critical feature of her/his psychiatric disorder, thus the therapist loses credibility when discussing the topic.

Binge Eating, Compulsive Overeating, and Food Addiction Binge eating disorder, compulsive overeating, and food addiction are all closely related. However, it is worth pointing out that in most circles they are considered separate and distinct from each other. Additionally, food addiction has only recently been accepted as being a viable condition (Blumenthal & Gold, 2010; Corsica & Pelchat, 2010; Duke Medicine Health News, 2011; Gearhardt & Corbin, 2011; Meule, 2011).

Binge eating disorder has long been associated with a higher incidence of obesity (de Zwaan, 2011; Pagoto et al., 2007; Yanovski, 2002). Additionally, recent research has linked food addiction with both binge eating and obesity (Avena, 2011; Davis et al., 2011; Gold & Graham, 2011; Rogers, 2011). More than one-third of obese individuals in weight loss treatment programs report difficulties with binge eating, and experts feel these numbers are vastly underreported (Yanovski, 2002). For over a one hundred years, one of the most successful medical interventions for obesity was fasting and, more recently, bariatric surgery (Bloom, 1959; Cawley, Sweeney, Kurian, & Beane, 2007).

Binge Eating Disorder Binge eating disorder, sometimes called compulsive eating, is not fully recognized by the DSM-IV and is considered to be an “eating disorder not otherwise specified” (APA, 2000a, p. 594). Additionally, the DSM-IV lists binge eating as a subset of both anorexia and bulimia. This multifaceted web of diagnostic criteria highlights the complexity of diagnosing eating disorders.

The DSM-IV defines a “binge” as “eating, in a discrete period of time (e.g., within any two hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances” (APA, 2000a, p. 584). Binge eating is not mentioned *per se* in the ICD-10, but it does provide criteria for “Overeating associated with other psychological disturbances” which includes overeating as a result of emotion or psychological stress (as cited in First & Tasman, 2010, p. 452).

Binge eating disorder (BED) is strongly associated with other psychiatric disorders, and as many as half of all people with binge eating disorder are depressed or have been depressed in the past (USDHHS, 2009). A 2012 study of 80 patients who were diagnosed with BED found that that 27.5% had current suicidal ideation and 10 subjects had prior suicide attempts (Carano et al., 2012). Research has consistently shown that anxiety disorders are common amongst individuals who have eating disorders, most notably social phobia, obsessive-compulsive disorder, and other specific phobias (Sawaoka, Barnes, Blomquist, Masheb, & Grilo, 2011; Wonderlich & Mitchell, 1997). Investigations have shown that binge eating disorder contributes to feelings of shame, loneliness, and poor self-esteem (Walter, 2002). Conversely, the same feelings can cause binge eating problems (Fairburn, 1995).

Therapeutic fasting may be problematic for some binge-eaters. Researchers found that patients who have binge eating disorder were more likely than non-binge-eaters to experience large lapses in adherence during fasting and refeeding (Yanovski, Gormally, Leser, Gwirtsman, & Yanovski, 1994).

Compulsive Overeating The binge eater is someone who compulsively overeats as a coping mechanism for dealing with underlying emotional pain (Katherine, 1996). Compulsive overeaters engage in frequent episodes of uncontrolled eating during which they may feel frenzied or out of control, often consuming food past the point of being comfortably full (Peacock, 2000). Binging in this way is generally followed by feelings of guilt and depression (Pagoto et al., 2007). Unlike individuals who have bulimia, compulsive overeaters do not attempt to compensate for their binging with purging behaviors such as fasting, laxative use, or vomiting.

Compulsive overeaters will typically eat when they are not hungry, which indicates an obsession with eating. Obsessive thinking is further demonstrated in that they spend excessive amounts of time and thought devoted to food, and secretly planning or fantasizing about eating alone (Peacock, 2000). While compulsive overeaters tend to be overweight or obese, persons of normal or average weight are also affected (Rogers, 2011).

Instead of binge eating, compulsive overeaters may engage in “grazing behavior,” during which they return to pick at food throughout the day (Katherine, 1996). This behavior results in a large overall number of calories being consumed even if the quantities of food that are eaten at any given time may be small. It is worth noting that not everyone who engages in grazing behavior is a compulsive overeater.

Food Addiction Food addiction is a term that is used to describe a pathological disorder; namely, the compulsive, excessive craving for and consumption of specific foods (Gearhardt, White, & Potenza, 2011). Similarly to binge eating disorder, this condition is characterized by an abnormally large intake of food that is harmful to the individual, resulting in compulsive overeating.

Some experts believe that food addiction is the culprit behind binge eating disorder (Gearhardt et al., 2011). Often referred to as compulsive overeating, food addiction—like binge eating disorder—is based on an obsessive-compulsive relationship to food (McQuillan, 2004). According to researchers who completed a 2011 study at Yale University, Binge eating disorder (BED) shares many characteristics with addictive behaviors (e.g., diminished control, continued use despite negative consequences), and a body of scientific literature is building to support addiction conceptualizations of problematic eating. Despite similarities, BED and “food addiction” may represent unique yet overlapping conditions. (Gearhardt et al., 2011, p. 201) Physician and author Jim McDougall compared fructose corn syrup to heroin and cocaine because all three have been processed in order to make a more potent concentrated substance intended for the purpose of generating intense pleasure. According to McDougall (2006), “People who consume purified carbohydrates in the form of refined flours and simple sugars become habituated to their intense stimulation” (p. 1). Other concentrated foods, such as refined foods that contain white flour, have this same effect during their calorie-dense intensity.

The concept of food addiction has long been rejected by the medical establishment. However, recent research has revealed the neurological similarities between food addiction and drug dependence (Avena, Bocarsly, Hoebel, & Gold, 2011; Avena & Gold, 2011; Rogers, 2011; Volkow, Wang, Fowler, Tomasi, & Baler, 2012; Zhang, von Deneen, Tian, Gold, & Liu, 2011).

In the book *The End of Overeating: Taking Control of the Insatiable American Appetite,* physician David Kessler (2010) compared overeating to both pathological gambling and substance abuse. He suggested that Americans suffer from “conditioned hypereating,” an intrinsic drive to eat high-fat, high-sugar foods (p. 145).

A 2004 study found that “food craving may be the evolutionary source for cravings of all kinds including cravings for drugs and alcohol” (Pelchat, Johnson, Chan Valdez, & Ragland, 2004, p. 1286). The scientists used magnetic resonance imaging to demonstrate that food cravings activate the same areas in the brain activated during drug-craving studies, the parts of the brain that are responsible for emotion, memory, and reward. The lead author in the study, psychologist Marcia Levin Pelchat, noted, “This is consistent with the idea that cravings of all kinds, whether for food, drugs, or designer shoes, have common mechanisms” (Monell Chemical Senses Center, 2004, p ¶1). In another study, researchers compared the neurological effects of food addiction to drug addiction: The regulation of food consumption is much more complex than that of drug consumption because food intake is modulated by multiple peripheral and central signals, whereas drugs are modulated mostly by the drug’s central effects. However, addictive drugs, like addictive foods, activate brain circuitry involved in reward, motivation and decision-making. (Volkow & Wise, 2005, p. 557) Based on this body of research, a number of addiction specialists have recommended that eating disorders be categorized and treated as an addiction, adding further acceptance of the concept of food addiction (Buser & Woodford, 2010; Daley & Marlatt, 2006; Hagedorn, 2009; Smith & Seymour, 2004).

In their book, *The Pleasure Trap: Mastering the Hidden Force That Undermines Health & Happiness,* Douglas J. Lisle and Alan Goldhamer (2006) developed a model called *the Motivational Triad* that helped to elucidate some of the dynamics behind food addiction. According to Lisle and Goldhamer, the Motivational Triad is a set of inherited primitive drives that pre-wire us toward 1) the pursuit of pleasure, 2) the avoidance of pain, and 3) the conservation of energy. For an individual with a food addiction, denying the pursuit of pleasure is in direct opposition with the goal of most eating disorder sufferers; the avoidance of emotional pain.

Eating Disorders and Brain Function Scientists have suggested that underlying brain abnormalities and dysfunction may contribute to the development of eating disorders (Lask & Frampton, 2011). In the book *Eating Disorders and the Brain,* Bryan Lask and Ian Frampton (2011) discussed the most notable research on eating disorders and the brain: For example, neuropsychological studies have shown impairments in different cognitive functions, especially executive and visuospatial skills, which appear to be trait-rather than state-related; in other words, they seem to predate the onset and therefore may actually be risk factors for the development of an eating disorder. (p. xi) Lask and Frampton also discussed neuroimaging studies that have shown neural circuit abnormalities that are believed to play a major role in the development of anorexia nervosa. Additionally, they noted neurochemistry research that found dysregulation within the neurotransmitter systems that affect the modulation of feeding, mood, anxiety, neuroendocrine control, metabolic rate, and temperature.

Disorders and Functional MRIs Some of the most revealing research on eating disorders has involved studying the brain function of subjects who have eating disorders while they view images of food. Participants are shown different types of foods, such as high-calorie versus low-calorie, or appetizing versus bland foods.

Research using functional magnetic resonance imaging (fMRI) has shown that women who have eating disorders have differential neural activation to viewing food images (Bohon & Stice, 2010; Marsh et al., 2009; Uher et al., 2004). This means that the brains of the women who have eating disorders react differently with regard to food than the brains of women who do not have the disorders.

Other studies have found that anorectics and bulimics have a significantly different cognitive response to food images than people who do not have the disorders (Brooks et al., 2011). Additionally, women who have bulimia have an increased activation in the reward and somatosensory regions of the brain, which could impinge on their cognitive control over food consumption and binge eating (Brooks et al., 2011).

In research, patients with bulimia have reported an excessive urge to eat, coinciding with a sense of lack of control over their eating (Brooks et al., 2011). This is in contrast to anorexia nervosa where sufferers report an inhibition of appetite (Brooks et al., 2011). Bulimics tend to have deficient self-regulatory control, which has been found at the neural level by reduced prefrontal and increased mesolimbic responses in the brain (Marsh et al., 2009; Uher et al., 2004).

In medicine, the term *nutritional state* refers to the fasting state versus the fed (or refed) state (Dinel, Kolditz, & Langin, 2010). Research has recognized that an individual’s nutritional status, when combined with different food stimuli, can change the activity in the brain’s reward systems (Goldstone et al., 2009). In one study using fMRI, researchers studied the interaction between the nutritional state and different food stimuli on brain food reward systems. They found that the blood oxygen level-dependent activity within regions of the brain varied when participants viewed pictures of high-calorie and low-calorie foods. Pictures of non-food household objects were included for control stimuli. Twenty non-obese healthy adults had their brains scanned on two separate mornings; once after having eaten a filling breakfast, and a second time after an overnight fast and skipping breakfast. The fasting increased the participants’ response to pictures of high-calorie over low-calorie foods in the ventral striatum, amygdala, anterior insula, and medial and lateral orbitofrontal cortex. The researchers also found that fasting enhanced the subjective appeal of high-calorie more than low-calorie foods. Furthermore, the change in appeal bias toward high-calorie foods was positively correlated with medial and lateral orbitofrontal cortex activation. These results demonstrated that fasting biased brain reward systems in favor of high-calorie foods. This informational could be useful in designing treatment models for therapeutic fasting with individuals with a history of eating disorders.

The Treatment of Eating Disorders Although the path of recovery from the different types of eating disorders varies somewhat, psychotherapy should be at the core of treatment for all eating disorders. Cognitive behavioral therapy is considered the gold standard for people who have anorexia, bulimia, and binge eating disorder (Cooper &, Fairburn, 2011; Fairburn, 2008; Pike, Carter &, Olmsted, 2011).

The assessment of an eating disorder can be a complex procedure, even for a seasoned professional (Crow & Brandenburg, 2011; Keel & McCormick, 2011: Wildes & Marcus, 2011). Many people who have eating disorders are in denial, which tends to make them resistant to treatment and non-compliant. Furthermore, understanding whether a disturbed eating pattern is a temporary phase versus the beginning of a full-blown eating disorder can be difficult to assess.

Effective treatment of any eating disorder addresses the underlying emotional and mental health issues, which often date back to childhood and the development of self-image (Crow & Brandenburg, 2011; Keel & McCormick, 2011: Wildes & Marcus, 2011).

Fasting in the Treatment of Anorexia Nervosa Anorectics lose the ability to fast much in the same way that an alcoholic loses the ability to drink alcohol. It is reasonable to assume that—for the anorectic—fasting may never again be a safe practice, even after years of recovery. However, because fasting has previously been an essential feature in most anorectics’ lives, it is important that therapists who treat these patients have a thorough understanding of the fasting phenomena, much in the same way that a drug and alcohol counselor has a comprehensive understanding of alcohol and drug use and abuse. Additionally, a therapist who is well-versed in fasting would be better equipped at explaining to the anorectic about the differences between healthy fasting versus anorexic starvation. Research is this area is gravely needed. Information needs to be gathered, such as how the anorectic grieves the loss of fasting, so that clinicians can have a deeper understanding of the anorectic's relationship with fasting. Meanwhile, it may be useful for treatment plans for anorectics to include a mental health professional who is familiar with fasting, in the same manner as nutritionists and other professionals are used (McIntosh, Jordan, & Bulik, 2011). In this manner, these therapists could be regarded as specialists in this arena.

Fasting in the Treatment of Food Addiction There are several mechanisms that are intrinsic to fasting that make it potentially useful in the treatment of food addiction. For one, fasting has a detoxifying effect that may help clear the brain of neurochemical imbalances created from certain foods (Immamura & Tung, 1984). Additionally, fasting has the potential to reframe the patient's unhealthy attachment to food (Buhner, 2012). Every human being has an attachment to food because we need to eat for survival. The degree of attachment differs for each person, as does the representation of food and the act of eating (Roth, 1992). At minimum, our attachment to food is a primal instinct, but when we are abused or neglected as children, food becomes an object that represents relief and escape. When we feel deeply dissatisfied with certain aspects of ourselves, we run the risk of seeking inappropriate satiation. Geneen Roth (1992) expressed her perspectives on an imbalanced emotional attachment to food in this way: We all have broken hearts. Every single one of us has had our heart broken at least once—in our families, from the loss or betrayal of a parent. Some had their hearts broken over and over again in terrible ways… We spend the rest of our lives eating or drinking or smoking or working so that we never have to go back there again. Never have to feel the unbearable pain of our broken hearts. (p. 62) According to Kabir Helminski (1998), an author on Sufism and spiritual psychology, fasting can facilitate the process of healing a broken heart by enabling deeper access of the pain: Another cure for the heart is keeping one's stomach empty. An excess of food hardens the heart.

Fasting is the opposite of subtle and not so subtle addictions with which we numb ourselves to the experience of the heart. When through fasting we expose the heart’s pain to ourselves, we become more emotionally vulnerable and honest. Only then can the heart be healed. (p. 252) By using fasting as an adjunct to other therapies, it could help patients to examine their long-standing problems with their attachments. Richard J. Foster (1998) in his book on spiritual disciplines said, “Our human cravings and desires are like rivers that tend to overflow their banks; fasting helps keep them in their proper channels” (p. 56).

Experts in the field of addiction believe that the most effective treatment for addiction is spirituality (Bailey, 1990; Connors, Walitzer, & Tonigan, 2008; Galanter, 2008; Gorski, 2001; Hsu, Grow, & Marlatt, 2008; Johnson & Robinson, 2008; Kasl, 1990; Keyes, 1999; Morgan & Jordan, 1999; Pearce, Rivinoja, & Koenig, 2008; Zemore, 2008). Health practitioners, historic figures, and spiritual leaders have testified to the transformative power of fasting (Buhner, 2012; Ehret, 1996/1922; Foster, 1998; Franklin, 2011; Gandhi, 2002/1962; Haas & Levin, 2006). In this manner, fasting may cause the food addict to undergo the type of massive paradigm shift needed in order to create change. According to Richard J. Foster (1998), “Fasting can bring breakthroughs in the spiritual realm that will never happen in any other way” (p. 60).

In developing a model for using fasting as a treatment for food addiction, it could be useful to consider the medical practice of very low calorie diets (VLCD). Although VLCD is not fasting, it has important implications as a treatment model for using fasting as a therapy for food addiction. VLCD is a modified diet that is monitored by a physician who is experienced in VLCD protocols (Linn & Stuart, 1977).

There have been a number of studies that have found that VLCD can reduce food cravings. This research has found that VLCD, sometimes performed in conjunction with psychotherapy, can reduce cravings and increase or maintain weight loss (Hoie, Myking, Reine, & Bruusgaard, 1997; LaPorte, 1992).

Since VLCD was first used in the 1920s, it has incorporated a variety of foods, including whole foods, meal replacements, and collagen protein (Bistrian et al., 1976; Genuth, Castro, & Vertes, 1974; Vertes, Genuth, & Hazelton, 1977). Over time, VLCD evolved into liquid meal replacements and a new term emerged; the protein-sparing modified fast (PSMF) which used regular food as the nutrient source (Palgi et al., 1985).

The exact protocol of a VLCD is determined by a number of factors, including gender and weight (Tsai & Wadden, 2006). An area for future research in food addiction would be to compare the efficacy of physician-assisted VLCD for weight loss versus supervised therapeutic fasting, particularly in regard to food cravings. It is worth noting that it can be difficult to find physicians who have experience in supervising patients on VLCD.

Using Eating Disorder Questionnaires in Therapeutic Fasting As research into fasting is further developed, pre-screening for eating disorders is strongly recommended. It seems reasonable to suggest that therapeutic fasting should have pre-screening for eating disorders much in the same way that medical testing is used to pre-screen for health problems. In this respect, self-report measures have multiple advantages for assessing eating disorder pathologies. Chief among these advantages are that administration can be performed without a trained interviewer in a relatively short amount of time (Mitchell & Peterson, 2007). Furthermore, self-report measures have an additional advantage over interviews in that participants may be more honest in a self-assessment than they might be with an interviewer (Bowling, 2005). The following are some of the more well-researched measures for assessing eating disorders and associated behaviors.

The Eating Disorder Examination Questionnaire (EDE-Q) **is a** self-report that is designed to assess the frequency of binging and purging behaviors and related attitudes (Fairburn & Beglin, 1994). It was originally developed as an investigator-based interview (Fairburn & Cooper, 1993). The current version of the EDE-Q (the EDE-Q 6.0) consists of 28 items that assess the presence and severity of symptoms over the previous 28 days (Fairburn, 2008). One question on the EDE-Q pertains to fasting. Question number 2 asks, “Have you ever gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?” (Fairburn, 2008, p. 311). Answers are chosen from seven options on a forced Likert scale: 1) No days, 2) 1 to 5 days, 3) 6 to 12 days, 4) 13 to 15 days, 5) 16 to 22 days, 6) 23 to 27 days, or 7) Every day.

The EDE-Q 6.0 could be a suitable choice to use as an assessment tool because it has good reliability. The internal consistency of the EDE-Q was high, with a Cronbach alpha coefficient for the global scale of 0.93 (Mond, Hay, Rodgers, Owen, & Beumont, 2004).

The Eating Disorder Inventory (EDI) is a self-report questionnaire that is used to assess the presence of an eating disorder: anorexia nervosa, both restricting and binge-eating/purging type, bulimia nervosa, and eating disorder not otherwise specified, including binge eating disorder (Garner & Olmsted, 1984). The EDI has been updated twice and the current EDI-3 consists of 91 items (Garner, 1991; Garner, 2004).

The EDI-3 measures the participant's "drive for thinness" as an excessive concern with dieting, preoccupation with weight, and fear of weight gain (as cited in Loeb, Brown, & Goldstein, 2011, p. 171). Additionally, the EDI-3 has a measurement for asceticism, which reflects the avoidance of sexual relationships (Garner, 2004).

Researchers have confirmed the factor structure of the EDI-3 and found that the internal consistency of the subscales was satisfactory, the discriminative validity was good, and the sensitivity and specificity were excellent (Clausen, Rosenvinge, Friborg, & Rokkedal, 2010). Cronbach's alpha estimated the internal consistency of the subscales using values =0.70 as the criterion for acceptable consistency.

The Eating Attitudes Test (EAT) is a 40-item self-report inventory that was originally designed to measure symptoms of anorexia nervosa (Garner & Garfinkel, 1979). The original version included 40 items but the 26-item version is now more commonly used (Garner, Olmstead, Bohr, & Garfinkel, 1982).

The EAT-26 does not have any questions that directly ask about food restriction, although some of the questions do relate to dietary restraint. For example, question 2 is, "Avoid eating when I am hungry," and question 24 is, "Like my stomach to be empty" (as cited in Castle, 2008, p. 261). Participants can choose from 6 answers: 1) always, 2) usually, 3) often, 4) sometimes, 5) rarely, or 6) never (Garner et al., 1982).

The EAT and EAT-26 are highly correlated ($r = 0.98$) (Garner et al., 1982). Test-retest reliability (Carter & Moss, 1984) and internal consistency (Garner & Garfinkel, 1979) of the EAT are good, and it has been found to have good concurrent validity with other eating disorder measures (Williamson, Anderson, Jackman, & Jackson, 1995).

Measurement of Dietary Restraint is conceptualized as the intent to limit caloric intake, independent of whether the individual is actually successful (Beresin, Gordon, & Herzog, 1989). In anorexia nervosa, consistent caloric restriction leads to weight loss, which is the hallmark of the disorder. In bulimia nervosa, the relationship is more complex because unsuccessful weight loss can help to mask the disorder. Researchers have hypothesized that dietary restraint can to lead to binge eating through a variety of physiological and psychological mechanisms (Fairburn, 1997; Lowe, 1993; Polivy & Herman, 1993; Vitousek & Orimoto, 1993; Waters, Hill, & Waller, 2001). Because of this variety of factors, measuring for a history of dietary restraint may reveal previous fasting behavior that was obsessive or compulsive.

Two useful measures of dietary restraint are the Restraint Scale (RS) and the Three Factor Eating Questionnaire Cognitive Restraint Scale (TFEQ-R). The RS (Herman & Polivy, 1980) and the TFEQ-R (Stunkard & Messick, 1985) are the most widely used self-report inventories of dietary restraint (Craighead & Smith, 2010). The RS measures the consequences of chronic unsuccessful caloric restriction (Gorman & Allison, 1995) and the TFEQ-R measures successful dieting (Tuschl, Platte, Laessle, Stichler, & Pirke, 1990).

It is worth noting that researchers have suggested significant shortcomings in certain areas of the assessment of eating disorders (Anderson, Lundgren, Shapiro, & Paulosky, 2004). The assessment of binge eating has been found to be particularly difficult to measure, largely because of varying definitions for binge eating behavior (Celio, Wilfley, Crow, Mitchell, & Walsh, 2004). For the purpose of screening therapeutic fasters for binge eating, the EDI-3 may be the most suitable measurement available based on reliability (Garner, 2004; Olmsted, McFarlane, Carter, & Trottier, 2007).

Another area of assessment that is lacking is that of dietary restraint. Although most questionnaires attempt to assess this feature, the exact nature of the behavior is generally not obtained from self-reports. The specifics of the type of dietary restraints could be useful in the treatment of eating disorders and therapeutic fasting.

Current eating disorder measurements have severe limitations with regard to the thorough assessment of fasting behaviors. For example, the questionnaires that ask about fasting only assess the extent of the activity in terms of the quantity of the behavior, not the quality of it. An important area of inquiry would be the purpose of the fast, most notably whether the objective was to improve a physical, psychological, or spiritual condition. For example, a 2006 study that used the Bulimic Investigatory Test, Edinburgh (BITE) questionnaire examined the bulimic behavior in 40 Brazilian athletes (Bosi & de Oliveira, 2006). There was one question on the BITE questionnaire that asked about fasting: “Do you ever fast for a whole day?” (Henderson & Freeman, 1987). Based on participants’ answers to this one question, researchers determined that 52.9% had fasted for an entire day (Bosi & de Oliveira, 2006, p. 129). The participants were from Rio de Janeiro, one of the most religiously diverse cities in South America (Goldschmidt & McAlister, 2004; Peterson & Vásquez, 2008). It is possible that some of the participants may have fasted in religious observance. Because there was no inquiry as to the purpose of the participants’ fasting, the researchers had no way of determining if it was for religious reasons. An argument could be made that this oversight invalidates the data in any research that uses an eating disorder questionnaire that assesses fasting behavior yet neglects to determine the purpose of the participant’s fast.

Last, no instruments have been developed to assess food addiction, most likely because it is so new to the fields of eating disorders and addiction. Another compounding factor in assessing food addiction may be its close relationship with binge eating behaviors, a behavior that is in and of itself difficult to assess (Meule, 2011).

By instituting the use of eating disorder questionnaires prior to therapeutic fasting, psychologists can begin to determine which signifiers are those that indicate a patient is not a suitable candidate for fasting. In establishing this protocol, fasting clinics may be able to prevent the development of eating disorders in at-risk patients. Additionally, the information collected could potentially benefit both the fields of therapeutic fasting and eating disorder treatment.

Conclusion In the book, *Wisdom from the Monastery: A Program of Spiritual Healing,* Bernhard Muller (2010) said, “A growing number of people now recognize that they are living more and more at a remove, and the rediscovered tradition of fasting will enable them to rid themselves of addictions and other compulsions” (p. 42).

Fasting may be a practical intervention for people who are suffering from food addiction, serving as a type of detoxification program that can help to break the neurobiological roots of psychological compulsions. In the treatment of anorexia and bulimia, mental health care professionals should become more familiar with how fasting is practiced in different religions and spiritual traditions, and alternative healthcare. Since these suggestions represent new and unproven models, research is needed in order to develop appropriate protocols to ensure patient safety and evaluate efficacy.

13

Hunger Artists, Fasting Girls, and Breatharians

The salient point about hunger artists was that they were performing
a job: they earned their living by starving.

—MICHELLE STACEY (2002, p. 301) Throughout history, men and women have fasted with the strict intent of garnering attention. A case in point were the fasting girls, a collection of young women who claimed to be able to live without food in order to receive what was tantamount to celebrity status. In a similar fashion, hunger artists displayed their wasted skeletal bodies in carnivals and sideshows. Both paved the way for illusionists and endurance artists who have fasted to gain notoriety and to become world record holders.

In addition to these supposedly miraculous feats of fasting, a group called the Breatharians emerged that claimed to be able to live on air and sunshine. One proponent of breatharianism, Michael Werner, said, “It may be that all human beings receive 30 per cent of their nourishment from light, only in the normal run of things we are not aware of this” (as cited in Werner & Stockli, 2007, p. 177).

Not surprisingly, a number of hunger artists, fasting girls, and breatharians have starved to death in their attempts to live indefinitely without food (Brumberg, 1988; Carleton, 1999; Portmann, 2003). The exceptions are either remarkable or entertaining; often both. The discussion that follows are the stories of these men and women, beginning with Franz Kavka’s fictional story of a hunger artist.

Hunger Artists: Spectacles of Fasting Hunger artists, also called *starvation artists,* were performers, common in Europe and America in the eighteenth and nineteenth centuries, who starved themselves for extended periods of time for the amusement of audiences who paid to watch. The phenomenon first appeared in the seventeenth century and saw its heyday in the 1880s. Hunger artists were almost always male, traveled from city to city, and performed widely advertised fasts of up to 40 days. In the common era, the practice has continued in an even more publicized manner, while maintaining a carnival-like atmosphere. This type of fasting, done by so-called endurance artists, bears a strong resemblance to performance art.

Franz Kafka's Hunger Artist Hunger artists have frequently appeared in carnival settings on public display. The most well-known literature about hunger artists is Franz Kafka's short story *A Hunger Artist* (2010/1922). The story opens with a description of a hunger artist who spends almost all his time on public display in a cage fasting. He is described as proudly displaying his protruding ribs to an attentive crowd (Russell, 2006).

A Hunger Artist is told retrospectively through third person narration. The narrator looks back several decades from the present time, to an era when the public marveled at the professional hunger artist, a public performer that fasted for extended periods of time. The story then does on to depict the waning interest in such displays.

The story begins with a general description of the hunger artist and then focuses on a single performer. The hunger artist performed in a cage for the curious spectators and was accompanied by teams of watchers (usually three butchers) who ensured that he was not secretly eating. Despite such precautions, many people, including some of the watchers themselves, were convinced that the hunger artist was cheating. Such suspicions annoyed the hunger artist, as did the 40-day limit imposed on his fasting by his promoter, known as the *impresario.* The impresario felt that after 40 days of fasting, public sympathy for the hunger artist significantly declined. The hunger artist, however, found the time limit problematic because it prevented him from bettering his own record. At the end of each fast, the hunger artist, as part of the theatrics, would be carried from his cage and forced to eat, which he always resented.

These fasting performances, followed by intervals of recuperation, were repeated for many years. Despite his fame, the hunger artist felt misunderstood. If a spectator expressed any pity toward him, he would erupt in fury, shaking the bars of the cage. The impresario would explain to the audience that such outbursts were due to irritability from fasting. The impresario would then display photographs of the hunger artist near death at the end of a previous fast, and tell the audience that the hunger artist was depressed that he could not fast longer. This further aggravated the hunger artist.

According to Kafka's story, the public's affinity for the hunger artist faded almost overnight. The hunger artist then broke his ties with the impresario and began working for a circus, where he hoped to perform even greater feats of fasting. Because he was no longer a main attraction, he was placed in a cage on the outskirts of the circus, near the animal cages. Eventually, the hunger artist was completely ignored and died, presumably from starvation and neglect.

There is a division among critical interpretations of *A Hunger Artist.* Most commentators agree that the story is an allegory, but they disagree as to what is represented (Brumberg, 1988; Cottom, 2010; Johnston, 2010; Russell, 2006). In his book *Franz Kafka,* Harold Bloom (2004) discussed the hunger artist's mimicry of Christ, noting the traditional religious significance of the 40-day period. Controversy aside, Kafka's story was based on the lives of real hunger artists who appeared in carnivals during his lifetime.

When Kafka wrote *A Hunger Artist,* he was suffering from tuberculosis and was unable to eat any solid food (Wolk, 2012). A year after the book was published, he died in a sanatorium weighing less than 90 pounds.

The Case of David Blaine In our contemporary culture, a phenomenon emerged where individuals attempted to become the world record holder for going the longest length of time without food. In 1973, a 27-year-old man claimed that record after fasting for 382 days under medical supervision (Stewart & Fleming, 1973). *The Guinness Book of World Records* recognized him as achieving the longest known fast, but soon stopped recording fasts out of the fear that someone would starve to death (Russell, 2006). Thirty years later, his record was all but forgotten as people from all walks of life began to engage in public fasts as feats of endurance.

One of the most culturally influential hunger artists of all time became a hunger artist somewhat accidentally. In September of 2003, illusionist and endurance artist David Blaine underwent a 44-day public water-only fast while suspended 30 feet in the air above the River Thames in London in a clear 3-foot by 3-foot by 7-foot Plexiglas box (Korbonits, Blaine, Elia, & Powell-Tuck, 2005). The case had an internal webcam so that the event could be broadcasted and closely observed by the public via the internet and television.

During the event, Blaine drank approximately 4 liters of water per day and lost 54 pounds (25% of his body weight) (Korbonits et al., 2005). The stunt had the feeling of a performance art gone awry when spectators taunted Blaine with food, pelted him with eggs, shot golf balls at him, and tortured him with laser pens. At one point, spectators below goaded him by frying fast food as he dangled above. Meanwhile, two young women flashed their breasts, adding an even more freakish quality to the event. Another man was arrested on criminal charges after disabling the water feed into Blaine's box (Lawson, 2003).

According to a spokesman for Blaine, he was attempting to complete "the most extreme exercise in isolation and physical deprivation ever attempted" (Lawson, 2003, 1 4). Instead, he succeeded in becoming the most bizarre hunger artist in modern history—possibly ever. His stunt was truly a global event, as demonstrated by the manner in which it polarized opinions around the world. It turned Britain into a hostile, angry, taunting mob that attacked not only Blaine, but America as well for spawning him. The *Scotsman* newspaper reported that a protester was heard shouting, "Go home David, go back to America. We don't want you" (1 7).

The *Scotsman* article was a scathing condemnation of Blaine, his stunt, and American values. The *Chicago Tribune* retorted, "Brits have no respect for David's high art" (1 6). This international controversy brought attention to public feats of fasting, although not necessarily in a positive way.

Blaine emerged on schedule on October 19, 2003, and was quickly hospitalized. The *New England Journal of Medicine* published a paper that documented his 44-day fast and stated that his refeeding was perhaps the most dangerous part of the stunt (Korbonits et al., 2005). The study reported his body mass index dropped from 29.0 to 21.6. Despite cautious management, he had hypophosphatemia (a low level of phosphorus in the blood) and fluid retention, elements of *refeeding syndrome.* As discussed in chapter two, refeeding syndrome is a disorder consisting of metabolic disturbances that occur as a result of the improper reinstitution of nutrition to patients who are starved or severely malnourished (Mehanna, Moledina, & Travis, 2008).

One year after Blaine's fasting stunt, a 50-year-old Chinese doctor undertook a 49-day fast hoping to beat Blaine's record. In a similar fashion as Blaine, Chen Jianmin stayed in a public glass enclosure for 49 days without food, beating Blaine's record (China Daily, 2004). By the end of his fast, Jianmin has lost 44 pounds. According to a news report, "Although he could still think logically and suffered no damage to his nervous system, heart, lungs or digestive system, his muscular atrophy, erosion of subcutaneous fat and loss of skin elasticity had all reached an alarming degree" (China Daily, 2004, ¶22).

In 2006, 46-year-old Russian Agasi Vartanyan beat Jianmin's record by one day, fasting 50 days (Independent Online, 2006). Vartanyan had fasted publicly in plastic cube on the banks of the Neva River outside of St. Petersburg. He lost 51 pounds during the stunt, dropping to 158 pounds. At the end of his fast, Vartanyan told reporters. "I feel offended because my efforts did not attract much attention. Only local media wrote about it" 3).

Apparently these men had not heard about the previous records that were longer than theirs. For example, in the fall of 1953, Din Weisbaden, a West German who was known as a "professional faster," fasted for 80 days (The Hindu, 1953, ¶1). In doing so, Weisbaden toppled a previous record of 76 days set by Heras, a magician who had been shut in a glass case during his fast.

The Fasting Girls *Fasting girls* is a term for young females, usually pre-adolescent and often from the Victorian era (Morgan, 1977). They claimed to be inediates, which means having the ability to exist indefinitely without nourishment (Vandereycken & van Deth, 1994). Also called *miraculous maids* (Brumberg, 1988) and *fasting women* (Gooldin, 2003), they usually came from poor families in rural areas (Lelwica, 2002). Scholars have been quick to note that there were very few fasting boys, suggesting that some of the women may have been influenced by the religious aspects of fasting (Brumberg, 1988; Vandereycken & van Deth, 1994).

The fasting girls had a distinctive relationship with the fasting saints. Michelle Mary Lelwica (2002) described this connection, using Catherine of Siena as an example: Ascetic fasting was not the sole prerogative of exceptionally holy women like Catherine. For many of her female contemporaries, food, (rather than money, property or institutional power) was the most accessible social and symbolic resource for defining one's relationship to God and others. (p. 27) The fasting girls alleged to have special religious or magical powers which enabled them to exist without food. Once the news of a girl's claims spread, she would usually gain celebrity status. According to H. Gethin Morgan (1977), Fasting girls have always been the object of curiosity… Not surprisingly, perhaps, the earliest descriptions of girls who could apparently exist for long periods without food or drink seem to have offered one of two explanations namely, that the girls were either influenced by the supernatural and miraculous nor were cheats. (p. 1652) Numerous cases of fasting girls were reported in the late nineteenth century and believers regarded such cases as miraculous. In some cases, the fasting girls also exhibited the appearance of stigmata. Doctors, however, ascribed the phenomenon to fraud and to hysteria on the part of the girls. Some of the girls were found to be frauds while others died of malnutrition. In contemporary literature, much of the behavior of the fasting girls is believed to be an earlier incarnation of anorexia nervosa (Bell, 1985; Brumberg, 1988; Bynum, 1987; De Somer, 2007; Vandereycken & van Deth, 1994).

In many respects, the fasting girls were female hunger artists who earned a living by fasting. When their stories of continually fasting for years at a time seemed incredulous, the women were routinely investigated to determine if they had been eating.

In his book *Fasting: The Phenomenon of Self-Denial,* Eric N. Rogers (1976), discussed the long list of young girls who fasted in this tradition, including Eave Fliegen, Veitken Johans, Janet MacLeod, Christina Michelot, Rebecca Smith, Martha Taylor, Ann Walsh, and Margaret Weiss. Every time a girl fasted and received notoriety, it encouraged other young women to do the same, causing the record of fasting girls to become quite lengthy, stretching from one century into the next. What follows is a brief description of some of the best known fasting girls.

Jane Balan: The French Fasting Girl of Confolens The case of Jane Balan, "The French Fasting Girl of Confolens," was described in 1613 by Pedro Mexio (1613). He noted that she lived without receiving meat or drink for at least three years (Rogers, 1976). Balan's condition began in February of 1599 when she was 11 years old after she had suffered a fever and began refusing all food (Furst & Graham, 1992).

By the time she was 14, Balan had achieved considerable notoriety. King Henry IV sent his physician to her to determine if her claims of abstinence were true (Brumberg, 1988). By the 1600s, both clergy and physicians were used to evaluate the validity of such cases.

Observers provided vastly different versions of Balan's appearance. Mexio's (1613) description of her seems contrary to someone who is starving as he described her with no breast atrophy or hair loss, and claimed she was still menstruating. Another source described her as follows: "The inferior part of her belly is in such manner grown lean, and dried up in her, as down from her sides, and so along her navel, there remaineth nothing of the belly she had before…" (as cited in Brumberg, 1988, p. 51).

Ann Moore: The Fasting Woman of Tutbury Ann Moore, known as "The Fasting Woman of Tutbury, Staffordshire," claimed to have gone for six years without food (Gooldin, 2003). Moore was a poor woman with two illegitimate daughters. (Rogers, 1976).

In 1813, Moore was in her late 40s when she claimed to have fasted for five consecutive years. Her story circulated in newspapers, reports, books, and medical journals and her home was a site of mass pilgrimage (Brumburg, 1988). As with the case of most hunger artists, Moore was studied by physicians and scientists hoping to expose her as a fraud (Gooldin, 2003). In Moore's case, as with so many other "fasting girls," it was allegedly discovered that she had cheated and ate food. According to Legh Richmond (1813), It had been repeatedly asserted that since the Spring of 1807 she had not swallowed any kind of solid food, with the exception once in the month of June following of the insides of a few blackcurrants, and that since the Autumn of 1808 she had not swallowed any liquid whatsoever. She also maintained that she could not swallow (if she did attempt it) without danger of immediate suffocation, that she felt neither appetite nor thirst, and had no evacuation. (p. 2) Moore claimed that she had absorbed nourishment direct from the atmosphere. She eventually confessed that she had, in fact, eaten food during the six years of her alleged fast. According to H. Gethin Morgan (1977), this was the first example of a "careful watch being made on a person's eating behaviour by a well organised committee of investigators, whose duties included regular estimations of weight" (p. 1652). Morgan noted that Moore's condition rapidly deteriorated when she was placed under close supervision but improved immediately after the watch was called off. Eventually, one of Moore's daughters confessed that she had been slipping her food (Rogers, 1976).

Mollie Fancher: The Brooklyn Enigma Mollie Fancher, otherwise known as "The Brooklyn Enigma," achieved notoriety for her claims of not eating for what appeared to be unreasonably long periods of time (Dailey, 2010/1894). Before being struck with the inability to eat, she attended a reputable school and, by all reports, was an excellent student. At age 16, she was diagnosed with dyspepsia, which is typically indigestion or an upset stomach. At the age of 19, reports came out that she had abstained from eating for seven weeks (Stacey, 2002).

It was after two accidents, in 1864 and 1865, that Fancher became famous for her ability to abstain from food (Anderson, 2010) and for being clairvoyant (Dailey, 2010/1894). As a result of the accidents, she lost her ability to see, touch, taste, and smell. However, she maintained that she had the power to predict events as well as the ability to read without sight.

By the late 1870s, Fancher alleged she was able to go without food for months at a time. Her claims of abstaining from food lasted for 14 years (Brumberg, 1988). Physicians began to question her abilities and asked to perform tests to determine the truthfulness of her claims. At the same time, a number of neurologists claimed that they were the only doctors competent in evaluating a fasting girl (Brumberg, 1988).

In 1877, a Manhattan doctor offered Fancher $2,000 to be observed for one month (Dailey, 2010/1894). She declined his offer, implying it was distasteful. Thus, Fancher's claims of complete abstinence were never verified.

Sarah Jacobs: The Welsh Fasting Girl Sarah Jacobs, from West Wales, was known as "The Welsh Fasting Girl" (Morgan, 1977). She was born on a large farm and had six brothers and sisters.

Jacob claimed not to have eaten any food for two years. After a local vicar became convinced that her case was authentic, Jacobs enjoyed a long period of publicity. She received numerous gifts and donations from people who believed she was miraculous (Brumberg, 1988). According to Richard W. Ireland (2012), "By 1869, the 'Welsh Fasting Girl' had become both a phenomenon and a celebrity" (p. 288).

As local doctors became increasingly skeptical about her claims, it was eventually proposed that she be monitored in a hospital environment to see whether her claims about fasting were true (Ireland, 2012). In 1869, her parents agreed for an examination to be conducted under strict supervision by nurses from a local hospital (Busby, 2003). The nurses were instructed not to deny Jacobs food if she asked for it, but to record any food she did receive.

After two weeks of strict observation, Jacobs was showing clear signs of starvation (Morgan, 1977). The vicar told the parents that their daughter's health was failing and that the nurses should be sent away so that she could eat. The parents refused and continued to withhold food even when informed that their daughter was dying. The parents insisted that they had frequently seen her like this before and that lack of food had nothing to do with her symptoms. Jacobs died of starvation 8 days later (Rogers, 1976). It was suspected that she had been secretly consuming dairy products from the farm late at night, something she could no longer do while under medical supervision (Hammond, 1879). H. Gethin Morgan (1977) described the tragedy as follows: Scrupulous care was taken to ensure that all possible sources of food were adequately monitored, and the nurses stayed with her at all times. After 18 days her condition deteriorated, and she became delirious and died. The experiment was ill-conceived because it did not allow the medical men concerned to administer nourishment when her condition deteriorated. (p. 1654) Jacob's parents were convicted of manslaughter and sentenced to 6 to 12 months in Swansea Prison (Ireland, 2012). The prosecutor called the parents actions, "a dramatic performance for the purpose of creating gain" (as cited in Ireland, 0000, p. 294). According to Morgan (1977), "We know nothing of what happened to the six other children in the family, although their home was lost and the farm sold" (p. 1654). Other reports said the parents were reunited after their release from prison (Ireland, 2012).

Josephine Marie Bedard: The Tingwick Girl The fasting girls became such a curiosity in the Victorian era that marketers rushed to put them on display. In the case of Josephine Marie Bedard, known as "The Tingwick Girl," two different Boston-based enterprises, the Nickelodeon and Stone and Shaw's museum, competed in court for the right to exhibit her publicly (Brumberg, 1988).

While Bedard and the other fasting girls were sometimes put on public display for commercial gain, there was also an element of scientific inquiry in regard to their authenticity. In Bedard's case, the media was part of an effort to prove that she was a fraud and not a medical phenomenon.

In 1889, the *Boston Globe* engaged Mary Walker, a local physician to stay with Bedard to determine if she was eating. Walker went to great lengths to prove that 19-year old Bedard was a cheat and claimed she had the evidence. Walker (1889) wrote an article in the *Boston Globe* which said, "At the hotel I searched her clothing and found in one of her pockets a doughnut with a bite taken out of it" and "I left a platter with three pieces of fried potato on it. I went there and one of the pieces was gone" (p. 8). According to historian Sharon Harris (2000), "It was a ridiculous event all the way around, and Mary [Walker] became part of the ruse" (p. 185, brackets added). Although Walker was unable to provide any conclusive evidence, the public believed the story and Bedard was labeled as a fraud (Harris, 2000).

Breatharians A breatharian is a person who believes that their body receives all the nourishment it needs from sunlight and therefore there is no need for food or drink (Scott, 2010). Followers claim that humans can be sustained solely by *prana,* the vital life force that is described in Hinduism (Rey, 2011). According to Ayurveda, sunlight is one of the main sources of prana (Werner & Stockli, 2007). Breatharianism is a type of inedia because it is practiced as a lifestyle in place of a normal diet. In describing breatharians, Esperanza S. Rey (2011) said the following: Some are even called to become breatharians also known as inedia (Latin for fasting). It is the ability to live without food or water. These are the people that live directly from the breath and the light or prana that flows all around us. They do not eat food or drink water. Nor to they experience the unconsciousness of sleep. You can actually see prana if you know how to look at it. It moves faster in sunlight and slower indoors or in covered areas. As a breatharian you can learn to transcend space-time. Most important, it involves reaching an ascended state. In the 5th Dimension there is no food consumption or water. In this state you have heightened awareness and live in perfect harmony and balance with all that is, therefore there is no aging. (p. 123) The consensus of the scientific community is that breatharianism is potentially lethal, and in fact a number of people have died practicing it (BBC, 1999; Walker, & O'Reilly, 1999). Some promote the practice of breatharianism as a skill which can be learned through specific techniques (Werner & Stockli, 2007). It is also noteworthy that some breatharians claim that breatharianism is not fasting. This may be because, in some Breatharian traditions, the practice is thought of as a survival method which relies on the light but also involves taking tiny amounts of food and liquid.

Paramhansa Yogananda's *Autobiography of a Yogi* (2007/1946) details two alleged historical examples of breatharianism; Giri Bala and Therese Neumann.

Giri Bala The Indian yogi and guru Paramhansa Yogananda (2007/1946) first met Giri Bala when she was 68. Bala alleged that she had not eaten nor taken fluids for over 56 years. She claimed that she employed a certain yogic technique to recharge her body with cosmic energy from the ether, sun, and air.

According to Yogananda, Bala lived the life of a humble villager in the Bengal community of Biur in India. In her early years as news spread of her abstinence, she had been taken to the palace of Maharaja of Burdwan, the leader of her province, where she was kept under strict observation. She was eventually released with the acknowledgement that she existed purely on light.

In Yogananda's (2007/1946) autobiography, he recounted a conversation with Bala in which he asked her if she had taught any other people how to live without food. Bala replied, No… I was strictly commanded by my guru not to divulge the secret. It is not his wish to tamper with God's drama of creation. The farmers would not thank me if I taught many people to live without eating! The luscious fruits would lie uselessly on the ground. It appears that misery, starvation, and disease are whips of our karma which ultimately drive us to seek the true meaning of life. (p. 452) According to Bala, she enjoyed a voracious appetite as a child, for which she was often teased. At age nine she was betrothed and moved to her husband's family home to live with her in-laws. Upon seeing how much Bala could eat, Bala's mother-in-law chided her about her gluttony. Bala exclaimed, "I shall soon prove to you that I shall never touch food again as long as I live" (p. 452).

Bala never had any children, her husband died, and she moved away from her in-laws. There is little else written about Bala, although she is frequently discussed in breatharian books about how she survived living without food (Stone, 1994; Werner & Stockli, 2007).

Prahlad Jani Many people find the concept of Breatharianism to be incredulous and even humorous. In 2010, scientists conducted a series of tests on self-proclaimed Breatharian 82-year-old Prahlad Jani who insisted that he had not eaten nor drank anything for 65 years. Reporter Simon Crisp retorted, "Doctors will continue studying him for 15 days, by which time they would expect to see muscle deterioration, dehydration, fatigue and even organ failure—or him popping out to the vending machine when he thinks no one is looking" (Crisp, 2010,¶ 7).

During the 15-day study, a protocol of around-the-clock surveillance was used with cameras and personal observation. Researchers said Jani's only contact with any form of fluid was when he gargled and bathed (Daily News & Analysis, 2010). The toilet in Jani's room was sealed to test his claim that he did not need to urinate or defecate. After 15 days of observation during which he reportedly did not eat, drink, urinate, or defecate, all medical tests on Jani were reported as normal (Daily News & Analysis, 2010). Furthermore, the researchers described him as being in better health than someone half his age (Rawstorne, 2010).

Jani, born Chunriwala Mataji, was an Indian sadhu. He claimed to have a hole in the roof of his mouth through which a divine food could flow

(Gupte, 1972). The yogis call this food *Amrit,* a nectar produced by the pituitary gland that is considered to be the fountain of youth (Gupte, 1972). In Hinduism, Amrit is repeatedly referred to as the drink of the gods, said to grant them immortality. Amrit also played a significant role in Vajrayana Buddhism as a sacramental drink which is consumed at the beginning of important rituals (Trungpa, 2009).

Hira Ratan Manek Hira Ratan Manek, born in 1937 in Bodhavad, India, claimed that beginning in 1995, he lived on water and occasionally tea, coffee, and buttermilk. Manek alleged that heliotherapy (gazing at the sun) was the key to his health and fasting abilities (Solar Healing Center, 2003). He cited the Jain Tirthankara Mahavira, ancient Egyptians, Greeks, and Native Americans as his inspiration. According to Manek, "It is victory over hunger, not its suppression" (Times of India, 2000, 1 5).

The Hindus called the practice of sun gazing *Surya Namaskar,* which is a well-known part of Hatha yoga asanas (Saraswati, 2002). Its origins lie in a worship of Surya, the Hindu solar deity (Suman, 2006). The actual practice of Surya Namaskar consists of a sequence of Hatha yoga movements and poses (Saraswati, 2002). Some followers of Surya Namaskara prefer to perform it at sunrise, which the orthodox consider to be the most spiritually favorable time of the day (Suman, 2006).

Manek claimed to have used Surya Namaskar to assist him in fasting for as long as 411 days. According to Robert Donald Tonelli (2011), "The HRM [Hira Ratan Manek] phenomenon is, in fact, a rediscovery of a scientific ritual, which was used to heal physical, mental, emotional and spiritual diseases in ancient times" (p. 337, brackets added).

Doctors studied Manek on a number of occasions, but were unable to offer any definitive conclusions. In 2000, doctors from the Health Care International Multitherapy Institute and the Jain Doctors Association in India monitored Manek's health from two days before the fast started and until he completed the fast 411 days later (Times of India, 2000). At the end of the study, endocrinologist Navneet Shah (2001) said, It's just fantastic, and absolutely amazing, but this is not a myth. It's not happening in Himalayas or distant jungles. It is happening in Ahmedabad, Gujarat (India) in the continuous presence of public and under strict medical check and supervision by expert doctor team. There is no reason to be skeptical. One may personally come and check and scrutinize.

We doctors have done all these months and fellow men have been staying with him all throughout. 1) It is worth noting that none of the scientific observations of Manek—or any other Breatharian, for that matter—have been published in any peer-reviewed medical journal.

Wiley Cecil Brooks Wiley Cecil Brooks is founder of the Breatharian Institute of America. He was first introduced to the public in 1980 when he appeared on the television show *That's Incredible* and lifted 1,100 lbs of weight (Leary, 2011). In 1981, Brooks was a featured guest on *the Tomorrow Show* with Tom Snyder where he spoke of his ability to live without food (YouTube, 2011). According to Brooks, there are four pollutants that prevent humans from living without food; water, food, air, and electromagnetic sources (Leary, 2011).

In 1984, the *Santa Cruz Metro* reported that Brooks was seen leaving a Santa Cruz, California 7-Eleven with a hot dog, a Slurpee, and a box of Twinkies. He claimed that "the informant was a scorned ex-lover spreading lies. Brooks later added that he does occasionally "take food" when he's away from the nutrient-rich pure mountain air" (as cited in Yewell, 2000, p. ¶122).

In 2000, Brooks introduced what he billed as a new product called "Fresh Air in a Bottle: Liquid Air (Not Water)." According to reporter John Yewell (2000), "The clear liquid comes sealed in a plastic drinking bottle and looks amazingly similar to water." (p. ¶120). Brooks was quoted as saying, "It's just miraculous. It's a process I've discovered to condense pure air into water. It's not really worth my time trying to describe it. You just have to try it for yourself' (p. ¶120). Brooks claimed that he learned the process from a spiritual man he met at a retreat in the mountains. The *Santa Cruz Metro* later reported that an analysis of Brook's bottled water revealed that is was actually de-ionized water (Yewell, 2000).

On his website, Brooks (2011c) stated that his followers needed to combine a junk food diet with a meditative incantation of five magic "fifth-dimensional" words which appeared on his website, some of which were taken from Kundalini yoga 1). Brooks (2011b) claimed that McDonald's "Double Quarter-Pounder with Cheese" possessed a special "base frequency" and recommended it as food for beginning breatharians 16).

Additionally, he claimed that Diet Coke is "liquid light." On his website, Brooks asked prospective Breatharian disciples to follow the junk food/magic word protocol, and then revisit his website in order to perform a test to determine if they could "feel the magic" (2011c, 9). According to Brooks' (2011a) website, the fee for those who wish to learn how to live without food is $100,000.

Jasmuheen (Ellen Greve) Jasmuheen, born Ellen Greve in 1957 in New South Wales, Australia, was a prominent advocate of breatharianism in the 1990s (Jasmuheen, 2007). She claimed to survive on a diet of fruit tea and sunlight (Jasmuheen, 1997).

In 1999, at 42 years of age, Jasmuheen volunteered to be monitored closely by the Australian television program *60 Minutes* for one week to determine if she was consuming any food (Carleton, 1999). She was watched day and night by a security guard to ensure that she had neither food nor water (The Independent, 1999). Her medical condition was checked regularly by a physician, Berris Wenck, president of the Queensland branch of the Australian Medical Association. Jasmuheen quickly became dehydrated, began to lose weight, and her speech slowed. On the advice of Wenck, *60 Minutes* abandoned the trial after only four days because the doctor felt Jasmuheen faced kidney damage if she continued. According to the newspaper *The Independent* (1999), "It might have been entertaining to see this self-styled prophet of the Breatharian Movement, as it is known, exposed on national television, were it not for the fact that the deaths of three people have been linked to her bizarre theories" 9). The article continued to say that visitors to Jasmuheen's "large villa in Brisbane's prosperous Chapel Hill area invariably find her refrigerator generously stocked with food," which she claimed was destined for consumption by her husband 10).

In response to the *60 Minutes* event, Jasmuheen issued a press release that said, "What appears to be delusion to some is simply a preferable reality to others, for without our dreams and visions, humanity has no hope" (as cited in The Independent, 1999, ¶16).

In 2000, Jasmuheen was awarded the Bent Spoon Award by Australian Skeptics, a spoof award presented to the "perpetrator of the most preposterous piece of paranormal or pseudoscientific piffle" (Birch, 2012, ¶1). Also in 2000, she received a second satiric award from the Ig Nobel

Prize, which honors “achievements that first make people laugh, and then make them think” (Improbable Research, 2012, ¶1).

Conclusion Scholars who have compiled lengthy lists of people who alleged not to eat for extended periods of time often have difficulty in discerning religious figures from charlatans (Bell, 1985; Brumberg, 1988; Rogers, 1976; Russell, 2006). Rogers (1976) claimed that while some individuals were clearly frauds, the verdict for others was not as clear. One fact remains certain: most of the people in question were publicized in the media for their claims of prolonged fasts.

The philosophies of hunger artists, fasting girls, and Breatharians contained a common thread: that the elimination of physical nourishment is a noble endeavor, worthy of attention. While some sought notoriety, others simply wanted to demonstrate their devotion to a worthy cause. The celebrity status that was bestowed upon them encouraged others to attempt even bigger feats that often resulted in either injury or death.

14

Hunger Striking and Political Fasting

A fast is not a hunger strike. Fasting submits to God's commands.
A hunger strike makes God submit to our demands.

—EDWIN LOUIS COLE (as cited in Teltumbde, 2011, 3)

Every day, people around the world attempt to create a paradigm shift by voluntarily fasting. This practice, known as *hunger striking,* is a method of nonviolent resistance in which participants fast as an act of political protest, often to provoke feelings of guilt in others, with the objective of achieving a specific goal, such as influencing a policy change (Keneally, 2011). Hunger striking has a long history of being used by activists and prisoners to draw attention to alleged injustices, to obtain civil rights, and to receive humane treatment (Russell, 2006).

Political activists have used hunger strikes to dramatize their cause and to force the hand of their opponents. A hunger strike that is not publicized is ineffective because publicity is necessary to put pressure on the person or organization whom the hunger striker is protesting against. Additionally, hunger striking is usually futile in settings in which hunger is accepted as a feature of everyday life. There is a general percept that food must be abundant in order for a hunger striker to be partaking in a voluntary act of abstinence. Hilde Bruch (1988) noted,

> Fasting as a means of coercion is effective only in relation to a responsive partner… During the Irish struggle for independence the British did not release fasting prisoners and two of them died after holding out for 74 and 76 days… During the Nazi terror, too, it is inconceivable that noneating political prisoners would have been granted their freedom, or been given any other special

considerations. (p. 12)

Hunger striking has a strong spiritual component, particularly when individuals fast to demonstrate compassion for people who are suffering, such as those who are unable to eat because they have no food. Psychotherapist Lucia Chambers explained this phenomenon, “Hunger striking involves the denial of the body’s needs for a higher purpose” (personal communication, May 9, 2012). Virtually all religions believe that every fast must have a purpose. In the *Handbook of Proverbs,* written in 1855, H. G. Bohn said, “He who fasts and does not do good, saves his bread but loses his soul” (as cited in Baab, 2006, p. 64).

Almost any issue can be protested with a hunger strike. For example, in August of 2003, six individuals who had a history of receiving treatment for mental health issues went on a hunger strike in California to challenge the American Psychiatric Association’s (APA) claim that most major mental illnesses are biological diseases (Double, 2004). The strikers called for the APA to provide evidence of their assertion that psychiatric disorders are the result of chemical imbalances in the brain (Edds, 2003). After 21 days, the hunger strikers abandoned their fast and the APA issued a statement, “It is unfortunate that in the face of this remarkable scientific and clinical progress, a small number of individuals and groups persist in questioning the reality and clinical legitimacy of disorders that affect the mind, brain, and behavior” (American Psychiatric Association, 2003, p. 1). In an article entitled *Biomedical Bias of the American Psychiatric Association,* Duncan B. Double (2004) criticized the APA’s handling of the hunger strike and suggested that the APA was supporting the interests of the pharmaceutical industry by advancing the idea that mental illness was rooted in biology and therefore treatable only with drugs. This incident highlights the manner in which a hunger strike can draw attention to a problem that otherwise may have been overlooked.

The following represents the stories of some of the most prominent hunger strikers, a discussion of legislature pertaining to hunger striking, and examples of political fasting. An examination of the men and women who have undertook hunger striking as an instrument for change reveals a steely determination unmatched by any rival.

The History of Hunger Striking

Hunger striking is thought to be as old as civilization itself. The origins of hunger striking can be traced back to ancient India, ancient Japan, and pre-Christian Ireland (Lecarpentier, 2006; O’Malley, 1991).

In ancient Japan, a man could humiliate his enemy by fasting against him, literally starving on his doorstep in a practice known as “fasting against him” (Sonenklar, 2011, p. 14). In this manner, fasting has been used as a form of passive-aggressive protest in which the faster partakes in self-injurious action for which another party was expected to suffer the blame.

In ancient India, the practice of fasting in protest dates back to around 500 BCE, where it is described in the *Ramayana,* an ancient Sanskrit epic ascribed to the Hindu sage Valmiki (Venkatesananda, 1988). In this practice, the protestor fasts at the door of an offending party—typically a debtor—as a public cry for justice. The Indian term for this longstanding tradition is “sitting dharna” (Bondurant, 1958, p. 118).

In pre-Christian Ireland, fasting as a method of protesting injustice was written into contemporary civic codes with specific rules by which it could be used (O’Malley, 1991). The fast was often carried out on the doorstep of the home of the offender. This was most likely due to the high importance that the culture placed on hospitality. Furthermore, if someone accused you of wrongdoing, it was considered dishonorable to allow him or her to die at your doorstep. The fasts were primarily undertaken to recover debts or to get justice for a perceived wrong. There are legends of Saint Patrick, the patron saint of Ireland, using a hunger strike to protest an alleged injustice (Beresford, 1997). According to Rona M. Fields (2004),

> The ancient Celtic practice of sacrificing oneself to shame the enemy by starving (not necessarily to death) on his doorstep has been, in the past century, converted into hunger strikes by the Irish to protest continued British military depredations on Irish soil. (p. xvii)

In the United States, hunger striking has been used by many individuals as a means of protesting governmental policies. Some of the most highly publicized hunger strikes were by protestors during the civil rights movement, the Vietnam war, and against nuclear power plants (Ryan, 2005).

Hunger striking in the twentieth century has been used as a form of protest throughout the world and was influenced by noted political activists such as the incarcerated suffragettes, Irish Republicans, and Mohandas Gandhi. It is conceivable that millions of people have used hunger striking as a tool for change, and not all of them are mentioned here. What follows are some of the well-known incidences of hunger striking and the subsequent effects of those strikes.

The Suffragettes

The feminist movement is a human rights movement that has extensive roots in hunger striking. Beginning in England around 1909, the first feminist hunger strikers were known as suffragettes (Van Wingerden, 1999). The suffragettes were routinely imprisoned for protesting the unequal treatment of women. Once imprisoned, the suffragettes would go on extended hunger strikes.

The first suffragette to adopt a hunger strike was Marion Wallace-Dunlop in July of 1909 (Jorgensen-Earp, 1997). The circumstances that led up to Wallace-Dunlop's decision to hunger strike involved her arrest for defacing public property when she used an ink stamp on the stonework of Saint Stephen's Hall, located at Britain's House of Commons (Pankhurst, 1911). After being found guilty, Wallace-Dunlop refused to pay a fine and was sent to prison for one month. In her book *Unshackled* (1959), Christabel Pankhurst recounted Wallace-Dunlop's first hunger strike:

> Miss Wallace Dunlop, taking counsel with no one and acting entirely on her own initiative, sent to the Home Secretary, Mr. Gladstone, as soon as she entered Holloway Prison, an application to be placed in the first division as befitted one charged with a political offence. She announced that she would eat no food until this right was conceded. (p. 112)

British authorities released Wallace-Dunlop after she had fasted for 91 hours, afraid that she might die and become a martyr. A number of other suffragettes began fasting immediately following Wallace-Dunlop's hunger strike in a show of solidarity.

Wallace-Dunlop also had the dubious distinction of being the first hunger-striking suffragette to be force-fed in prison. Force-feeding, a method that is commonly used to force imprisoned hunger strikers to eat, involves forcing a tube down the person's nose and throat and into their stomach, then pouring liquid food into the body. More often than not, force-feeding is a brutal act that results in the chipping of teeth, continual vomiting, and breathing difficulties when misintubation occurs and the tube ends up in one of the lungs instead of the stomach.

In her book *Prison and Prisoners,* suffragette Constance Lytton reported her own experience of being force-fed in 1909:

> Two of the wardresses took hold of my arms, one held my head and one my feet. The doctor leant on my knees as he stooped over my chest to get at my mouth. I shut my mouth and clenched my teeth… The doctor seemed annoyed at my resistance and he broke into a temper as he pried my teeth with the steel implement. The pain was intense and at last I must have given way, for he got the gap between my teeth, when he proceeded to turn it until my jaws were fastened wide apart. Then he put down my throat a tube, which seemed to me much too wide and something like four feet in length. I choked the moment it touched my throat. Then the food was poured in quickly; it made me sick a few seconds after it was down. I was sick all over the doctor and wardresses. As the doctor left he gave me a slap on the cheek. Presently the wardresses left me. Before long I heard the sounds of the forced feeding in the next cell to mine. It was almost more than I could bear, it was Elsie Howley. When the ghastly process was over and all quiet. I tapped on the wall and called out at the top of my voice. 'No Surrender', and then came the answer in Elsie's voice, 'No Surrender'. (Lytton & Warton, 1914, p.268)

The hunger strikes of the suffragettes were highly influential, both in contemporary politics and in encouraging other activists. For example, Wallace-Dunlop was said to have influenced Mohandas Gandhi and the Irish nationalists (Lennon, 2009). According to Joseph Lennon (2009),

> Just three weeks after Wallace-Dunlop's release, he [Gandhi] was in London and came to a WSPU [Women's Social and Political Union] meeting honouring the hunger strikers and crediting Wallace-Dunlop as "the founder". He noted the next day in a letter: "I attended a great suffragette meeting last night; met Mrs. Pankhurst also… . We have

> a great deal to learn from these ladies and their movement." (p. 14, brackets added)

The imprisoned suffragettes received a great deal of sympathetic media attention during their hunger strikes. In contrast, the British government was seen as nonresponsive when it was unable to stop the suffragettes' hunger strikes (Pankhurst, 1911). Thus, in response to the suffragettes' endless hunger strikes, the legislature passed the Cat and Mouse Act in 1913, a law that released the hunger striker and then rearrested her when she was eating and healthy again (Jorgensen-Earp, 1997). Numerous other laws were passed in an effort to deal with the suffragettes' hunger strikes and the negative publicity that it cast upon the government (Crawford, 2001).

Like their British counterparts, American suffragettes also used hunger striking as a method of political protest (Jorgensen-Earp, 1997). A few years prior to the passage of the Nineteenth Amendment to the United States Constitution which granted women the right to vote, a group of American suffragettes that were led by Alice Paul engaged in hunger strikes and endured forced feedings while incarcerated at the Occoquan Workhouse in Virginia. These women were ultimately credited with the passage of legislation that secured a woman's right to vote.

In 2004, HBO Films released the film *Iron Jawed Angels,* a movie about Alice Paul and the American suffragettes in which the cast vividly portrayed the women's hunger strikes and force-feeding (von Garnier, 2004). Actress Hilary Swank played the role of Paul who in 1917, was imprisoned along with a group of other suffragettes for picketing. Once in prison, Paul was quickly thrown into solitary confinement for breaking a window to get fresh air, and she subsequently went on a hunger strike. After being denied counsel, she was placed in a straitjacket and admitted to the psychiatric ward. After examining her, the psychiatrist informed President Woodrow Wilson, who was watching the suffragettes closely, that Paul showed no signs of mania or delusion. She was returned to the prison's general population, where she proceeded to lead the suffragettes on a mass hunger strike. The warden began force-feeding the women, beginning with Paul. President Wilson refused to budge on the treatment of the women or the suffrage amendment. However, once the news of the force-feeding was leaked to the media, public opinion shifted in favor of the suffragettes.

The Thirst Strike

A thirst strike is similar to a hunger strike, with the exception that the participant has no food or water (Neeser, Ruedin, & Restellini, 1992). A thirst strike carries the same dangers of an *absolute fast* or *black fast* (fasts with no food or water) as it is essentially the same behavior, albeit performed for different reasons (Hammond, Moll, Robertson, &

Chehnicka-Schorr, 1986; Pollock & Arieff, 1980). Hunger strikes that include the consumption of water are far more common than thirst strikes, presumably because they are much easier to endure. The voluntary refusal of liquids requires additional determination because the sensation of thirst is one of the most powerful behavioral drives, even more so than hunger (Phillips et al., 1984; Robertson, 1984).

It is not known who was the first political faster to undertake a thirst strike, but it is generally believed to be one of the suffragettes. In her book *My Own Story,* Emmeline Pankhurst (1914) describes the repercussions of her thirst strike as follows:

The hunger strike I have described as a dreadful ordeal, but it is a mild experience compared with the thirst-strike, which is from beginning to end simple and unmitigated torture. Hunger striking reduces a prisoner's weight very quickly, but thirst-striking reduces weight so alarmingly fast that prison doctors were at first thrown into absolute panic of fright. Later they became somewhat hardened, but even now they regard the thirst-strike with terror. I am not sure that I can convey to the reader the effect of days spent without a single drop of water taken into the system. The body cannot endure loss of moisture. It cries out in protest with every nerve. The muscles waste, the skin becomes shrunken and flabby, the facial appearance alters horribly, all these outward symptoms being eloquent of the acute suffering of the entire physical being. Every natural function is, of course, suspended, and the poisons which are unable to pass out of the body are retained and absorbed. The body becomes cold and shivery, there is constant headache and nausea, and sometimes there is fever. The mouth and tongue become coated and swollen, the throat thickens, and the voice sinks to a thready whisper. When, at the end of the third day of my first thirst-strike, I was sent home, I was in a condition of jaundice from which I have never completely recovered. So badly was I affected that the prison authorities made no attempt to arrest me for nearly a month after my release. (p. 316)

The Irish Nationalists have also undertaken thirst strikes (Flynn, 2011). On May 11, 1946, IRA member Sean McCaughey died after thirty-one days on a hunger strike, of which the last twelve were on a thirst strike, after asking for his unconditional release.

The first known scientific literature on thirst striking was published by Neeser, Ruedin, and Restellini (1992) in the *British Medical Journal.*

The authors described the condition of a 41-year-old unnamed prisoner who had been admitted for the third time to the maximum security hospital ward in Geneva, Switzerland, after "having completely refrained from drinking and eating for 13 days to protest against his solitary confinement" (p. 1352). He was suffering from severe dehydration, hypernatremia, and acute prerenal failure. The researchers determined the following:

> We initially doubted this patient's claim not to have drunk for 13 days; nevertheless, he undoubtedly did undergo an extended period without drinking and as a result suffered hyperosmolar dehydration and acute prerenal azotaemia. His negative fluid balance was estimated to be 10 liters. In experimental hypernatraemia brain cells produce solutes called "idiogenic osmoles," and this protective mechanism might explain the mildness of his neurological symptoms. The danger in cases such as this is not recognizing the severity of the dehydration. Clinicians should suspend their disbelief, start investigations, and offer rapid treatment without which a fatal outcome might ensue. (p. 1352)

Contemporary hunger strikers still undertake thirst strikes, which tends to shorten the duration of their strikes and often ends by hastening their death. Sometimes, in addition to refusing food and water, hunger strikers will also refuse to sleep (Winslow, 1996). The suffragettes were the first group who were known to take part in this practice.

Mohandas Karamchand Gandhi

Mohandas Karamchand Gandhi is perhaps the best-known of all hunger strikers. He engaged in numerous hunger strikes throughout his career in an effort to persuade others to practice his principles of nonviolence (Gandhi, 2008).

Born on October 2, 1869, into a family of merchants, Gandhi's mother was a Hindu and his father was a Jain (Johnson, 2009). His mother was deeply religious and frequently fasted according to Hindu tradition (Kinsley, 1982). Gandhi said he was amazed at his mother's capacity to fast and described her dedication to fasting as follows:

> She would take the hardest vows and keep them without flinching. Living on one meal a day during Chaturmas was a habit with her. Not content with that, she fasted every other alternate day during one Chaturmas. During another Chaturmas, she vowed not to have food without seeing the sun. We children on those days would stand, staring at the sky, waiting to announce the appearance of the sun to our mother. Everyone knows that at the height of the rainy season the sun does not often condescend to show his face. And I remember days when, at his sudden appearance, we would rush and announce it to her. She would run out to see with her own eyes, but by that time the fugitive sun would be gone, thus depriving her of her meal. "That does not matter," she would say cheerfully, "God did not want me to eat today." And then she would return to her round of duties. (as cited in Rogers, 1976, p. 77)

Gandhi grew up in an eclectic religious atmosphere in which he viewed Jainism as a branch of Hinduism (Ardley, 2002). In his autobiography, Gandhi mentioned that Jain monks were frequent guests in his house (Gandhi, 1927). One of the most influential people in Gandhi's life was a Jain named Shrimad Rajchandra (born Raychandrabhai Mehta), a prominent Jain philosopher and avid faster (Ardley, 2002). In reference to Rajchandra, Gandhi (1927) said,

> [Rajchandra] would always confide to me his innermost thoughts. In my moments of spiritual crisis, therefore, he was my refuge. And yet, in spite of this regard for him I could not enthrone him in my heart as my Guru. The throne has remained vacant and my search still continues. (p. 75, brackets added)

In regard to his religious beliefs and fasting, Gandhi said, "My religion teaches me that, whenever there is distress which one cannot remove, one must fast and pray" (as cited in James, 2004, p. 359). He often wrote of the deep spiritual nature of fasting and said, "A genuine fast cleanses the body, mind and soul. It crucifies the flesh and, to that extent, sets the soul free” (as cited in James, 2004, p. 359).

For Gandhi, fasting was an important method of exerting mental control over basic desires. In his autobiography, he discussed his need to fast to eradicate his desire for certain foods (Gandhi, 1927). He felt that fasting would diminish human appetites, thereby bringing the body under the mind’s control. When not fasting, he abstained from meat, alcohol, stimulants, salt, and most spices, and he was particular about how his food was cooked. Although Gandhi viewed fasting as a health-promoting experience, his hunger strikes took a heavy toll on his physical health and brought him close to death.

Gandhi thought that fasting could cleanse the spirit by stimulating the courage to withstand all impulses and pain. He recognized that fasting had the potential to put the body through unusual hardship, and he said he knew that extreme fasting could result in death (as cited in Lelyveld, 2011, p. 228). According to Bhikhu C. Parekh (2001), Gandhi’s reasons for fasting were concise:

> One had to touch their hearts and activate their consciences, and fasting was one of the most effective ways to do so. As Gandhi understood its nature and mechanism, the idea of fasting had two distinct sources, the Hindu practice of *tapas* (penance) and the predominantly Christian idea of suffering love. The fast was an act of self-imposed suffering designed both to purify oneself and to energize the consciences of those addressed by it. (p. 15)

Gandhi believed strongly in the Hindu principle of *ahimsa,* or nonviolence. When he was 19, he read Henry David Thoreau’s *Civil Disobedience,* which further inspired his philosophy of nonviolent communication (Homer, 1956).

Gandhi became known as the Father of India because of his promotion of justice and harmony between people of all faiths. He once declared, “I am a Hindu, a Muslim, a Christian, a Zoroastrian, a Jew” (as cited in Tharoor, 1998, p. 21). Although Gandhi was adored by people all over the world, he was also a controversial figure because of his political influence. Eric N. Rogers (1976) said, “His fasting undoubtedly touched more hearts than anything else he did. Not just in India, but practically everywhere, men were haunted by the image of a frail man cheerfully enduring privation for the same of a principle” (p. 80).

Gandhi's first hunger strike in 1913 was to atone for the immoral behavior of his friends (Adamson & Horning, 2002). In 1918, he fasted to protest the low wages of workers in Ahmedabad, and in 1919, he fasted to protest the violence in Satyagraha. Gandhi's fasting was his way of reaching out to the largest number of people in a country that spoke 14 languages (Rogers, 1976). Louise Fischer (1954), one of his biographers, explained, "When words failed, he fasted" (p. 75). In describing the influence of hunger striking, Gandhi said,

> Nonviolence in its positive aspect as benevolence… is the greatest force because of the limitless scope it affords for self-suffering without causing or intending any physical or material injury to the wrongdoer. The object is always to evoke the best in him. Self-suffering is an appeal to his better nature, as retaliation is to his baser. Fasting under proper circumstance is such as appeal *par excellence.* If the politician does not perceive its propriety in political matters, it is because it is a novel use of this very fine weapon. (as cited in Gandhi & Dalton, 1996, p. 88)

On special occasions, Gandhi would undertake one of his best-known types of political fasts, called *fasting unto death* or *fast-unto-death* (Gandhi, 1927). This is different than the fasting to death that is performed in Jainism, which primarily has a spiritual focus. As the name implied, Gandhi stated that he was intent on fasting until he died or until his political demands were met, whichever came first (as cited in Lelyveld, 2011, p. 228). Gandhi undertook 17 hunger strikes in his career, three of which were incidences of fasting-unto-death (Ramachandran, 2011). The three occasions during which Gandhi undertook fasts-unto-death were as follows:

- To stop the revolutionary activities after the Chauri Chaura incident of 1922
- To protest the 1934 communal award that gave separate electorates to Untouchable Hindus
- To stop the 1947 bloodshed between Hindus and Muslims in Bengal and Delhi

Much of Gandhi's work and many of his hunger strikes were to help India gain independence from the United Kingdom. India was a British colony from 1850 to 1947 (Hinduism Today, 2010). As India drew closer to independence during the 1940s, dissention grew between Hindus and Muslims, both of whom disagreed vehemently about the democratic government that they hoped to build (Lelyveld, 2011). Since the majority of Indians were Hindu, the Muslims feared that they would not have any political power if India were to become independent. Because of this, the Muslims wanted the six provinces in northwest India—which already had a majority population of Muslims—to become an independent country. Gandhi opposed the idea of dividing India and tried to bring both sides together (Erikson, 1969). Instead, massive violence broke out, which included rape, slaughter, and the burning of entire towns.

Although British Prime Minister Winston Churchill steadfastly opposed the idea of losing India as a British colony, Britain eventually was forced to concede. After becoming financially crippled by World War II and facing bankruptcy, Britain gave up India along with other colonies, including Burma and Ceylon.

India’s transition to freedom on August 15, 1947, brought with it a terrible tragedy as Pakistan was partitioned from India on the basis of two religions, Hinduism and Muslim (Hinduism Today, 2010). A huge relocation followed as 7.5 million Hindus and Sikhs fled Pakistan and an almost equal number of Muslims relocated from India to Pakistan. Violence between the Hindus and Muslims ensued as Muslim refugees marched out of India on a long trek to Pakistan, and Hindus—who suddenly found themselves in a Muslim Pakistan—packed up their belongings and marched on foot to India (Read & Fisher, 1999). Among the estimated 15 million Indians who were uprooted from their homes, one million died along the way from illness, exposure, dehydration, attacks, and riots.

To stop the widespread violence, Gandhi went on a fast-unto-death. He would only eat again, he stated, once he saw clear plans to stop the violence. His fast began on January 13, 1948. Realizing that the frail 78-year-old Gandhi could not withstand a long fast, both sides worked together to create peace (Homer, 1956). On January 18, a group of more than one hundred representatives from both sides approached Gandhi with a promise for peace, thus ending his fast. However, not everyone was satisfied with the peace plan. There were a few radical Hindu groups who believed that India should never have been partitioned, and they subsequently blamed Gandhi for the separation (Read & Fisher, 1999).

On January 30, 1948, Gandhi was walking to a prayer meeting when a 38-year-old Hindu who was named Nathuram Godse stopped before him, bowed, and then shot him three times (Adams, 2011). Godse later claimed that he was angry at Gandhi for his involvement in the partitioning of India. Gandhi, who had survived five previous assassination attempts, died almost instantly after saying “Hey Ram” which translates as “Oh God” (as cited in Parekh, 2001, p. 32). His assassination had a cathartic effect, and much of the violence ceased as all of India mourned his death.

Gandhi’s use of hunger striking as a political tool became so widely accepted that a new term emerged to describe the type of fasting that he did, known as the *Gandhian fast* (Ardley, 2002, p. 57).

The Irish Hunger Strikes

Hunger striking in Ireland dates back to before Christianization, to a time when those who lacked power protested against the more powerful by fasting in order to call attention to an injustice or to claim a debt owed (O’Malley, 1991). This form of fasting was considered a duty performed in order to inflict punishment directly on the wrongdoer when all other possibilities had been exhausted. The power to end the fast rested solely on the accused. If the faster was allowed to continue to death, the community would consider the wrongdoer responsible and require that he pay a debt of atonement to the dead man’s family.

In the 20th century, hunger striking in Ireland took on a wider political significance. By fasting against a government, Irish hunger strikers wagered the value of their lives in evidence of the righteousness of their demands. If the government allowed the striker to die, its leaders were seen as inhumane and callous to the loss of human life. According to historian Padraig O’Malley (1991),

> Hunger striking fuses elements of the legal code of ancient Ireland, of the self-denial that is the central *characteristic of* Irish Catholicism, and of the propensity for endurance and sacrifice that is the hallmark of militant Irish nationalism. (p. 25).

The Irish first began to use hunger striking for political reasons in 1917, when Thomas Ashe, who had been imprisoned for taking part in the 1916

Easter Uprising, refused to wear prison clothing or do penal labor (O'Malley, 1991). Ashe and other Republican prisoners at Dublin's Mountjoy Prison embarked on a hunger strike to demand that they either be treated as political prisoners or released from prison. Ashe died shortly after being force-fed by the prison staff. The Irish saw him as a martyr, and his funeral drew several thousand people.

The next mass hunger strike by the Irish nationalists was in 1920 when Terence MacSwiney was imprisoned for carrying secret IRA codes (Beresford, 1997). He joined nine others for the longest hunger strike in recorded history, dying on the 74th day of his fast. During the ordeal, MacSwiney said, "It is not those who inflict the most but those who suffer the most who will conquer," words that became the motto of other Irish hungers strikers who followed him (as cited in O'Malley, 1991, p. 26).

In 1980, the scenario was repeated when seven Republican prisoners at the Maze Prison in Northern Ireland launched a hunger strike. The men were protesting the British government's revocation of their Special Category Status, which had given the paramilitary prisoners a rank that was a prisoner-of-war-like class (O'Hearn, 2006). Essentially, the men wanted to be recognized as political prisoners rather than common criminals, but the British Government refused.

The 1980 strike consisted of Brendan Hughes, Tommy McKearney, Raymond McCartney, Tom McFeeley, Leo Green, John Nixon, and Sean McKenna (Beresford, 1997). At one point during the strike, McKenna went into a coma and almost died. In response, the British government conceded to the prisoners' demands with a 30-page document detailing a proposed settlement. The strike, led by Hughes, was called off and McKenna's life was saved.

Within a few weeks, it became clear that the British government had reneged on the agreement and the prisoners called another hunger strike. This time, instead of many prisoners striking at the same time, the hunger strikers started fasting one after the other in order to maximize the publicity over the fate of each (Toolis, 1997). This strategy worked well and the Irish hunger strikers received unparalleled notoriety.

The media attention was enormous. There was widespread support for the hunger strikers from Irish republicans and the broader nationalist community on both sides of the Irish border. The ten men who took part in the 1981 hunger strike are listed below along with the start date and length of their hunger strike:

Name	Start Date	Length of Strike
Bobby Sands	March 1	**66 days**
Francis Hughes	March 15	**59 days**
Raymond McCreesh	March 15	**61 days**
Patsy O’Hara	March 22	**61 days**
Joe McDonnell	May 8	**61 days**
Kieran Doherty	May 22	**73 days**
Kevin Lynch	May 23	**71 days**
Martin Hurson	May 28	**46 days**
Thomas McElwee	June 8	**62 days**
Michael Devine	June 22	**60 days**

(Beresford, 1997)

All but two of the men were members of the Provisional Irish Republican Army (Beresford, 1997). O’Hara and Devin belonged to a radical splinter group known as the Irish National Liberation Army.

During this particular strike, some British citizens were uncharacteristically supportive of the hunger strikers. Bobby Sands was elected to British parliament, after which a law was quickly introduced to prevent the other Irish hunger strikers from being elected. Sands was the first prisoner to die during the hunger strikes, further cementing his position as the figurehead (Toolis, 1997). An estimated 100,000 people attended Sands’ funeral in Belfast (University of Ulster, 2011). Sands had explained his devotion to the Irish people as follows:

> They won’t break me because the desire for freedom, and the freedom of the Irish people, is in my heart. The day will dawn when all the people of Ireland will have the desire for freedom to show. It is then we’ll see the rising of the moon. (as cited in Beresford, 1997, p. 73)

Although the series of 1981 hunger strikes had received international media attention, people responded with shock upon hearing the news of Sands’ death (O’Hearn, 2006). When Sands died on May 5, 1981, Fox News reporter Sheperd Smith made the following televised announcement, “On this date Bobby Sands died after 66 days on a hunger strike in prison in Belfast, N.I. The moral of the story, eat more often” (as cited in Morrison, 2003, ¶3). Smith’s statement, seen by many as racist and morally reprehensible, drew mass protest (Facebook; 2011; Irish Freedom Committee, 2011; Morrison, 2003). A petition was immediately created asking for a boycott of Fox News, and the petition is still on the internet and is available for signing 30 years after Sands’ death. The petition read as follows:

> We the undersigned wish to register both our disgust and condemnation at Fox News Sheperd Smith’s recent comments on Irish Hunger Striker Bobby Sands which were as follows. “On this date Bobby Sands died after 66 days on a hunger strike in prison in

> Belfast N.I. The moral of the story eat more often." Bobby Sands suffered incalculable suffering under British oppression in Northern Ireland and is revered worldwide by people of all persuasions for his sacrifice, principles and courage. When he died over 100,000 people attended his funeral, protests were held all over the world and streets were named in his honour. Sheperd's cheap throwaway remarks denigrate his memory and insults his family, friends and comrades. We pledge to boycott Fox News, its affiliates and any company which chooses to advertise on it until a full apology and retraction is issued. (Petition Online, 2011)

As of 2012, there was a Facebook page called "Bobby Sands family deserve an apology from Shepard Smith," also calling for electronic signatures (Facebook, 2011). Furthermore, a video clip of Smith's original report could be found on YouTube (YouTube, 2011).

At the end of the 1981 hunger strikes, the ten men had fasted for 46 to 73 days, taking only water and salt. By the time the strike was over, ten Irish activists had died between May and August of 1981.

After the deaths of the men and severe public disorder, the British government granted partial concessions to the prisoners. This gave a huge propaganda boost to a severely demoralized Provisional IRA.

The original pathologist's report recorded the Irish hunger strikers' cause of death as "self-imposed starvation" (as cited in O'Keeffe, 1984, p. 350). The report was later amended to "starvation," after the dead strikers' families and numerous others protested.

In 2009, the film *Hunger* was released depicting the horrific prison conditions that motivated Sands and the other nine men to hunger strike (McQueen, 2009). Michael Fassbender played the role of Sands and the film documented his entire hunger strike, along with the fasts of the other men. The title of the film was intended to be a double entendre representing the ten men's hunger for freedom.

César Estrada Chávez

César Estrada Chávez was an American farm worker, labor leader, and civil rights activist. During his career, he undertook a number of hunger strikes, which he referred to as "spiritual fasts" and regarded as "personal spiritual transformation" (as cited in Espinosa & Garcia, 2008, p. 108).

According to Chávez, his desire to fast was influenced both by the Catholic tradition of doing penance and by Gandhi's fasting as a means to promote nonviolence (Garcia, 2007).

Chávez was born in 1927 on a small farm near Yuma, Arizona. During the Great Depression in the 1930s, his family lost their farm and were forced to move (Rogers, 1976). The Chávez family joined thousands of other farm workers who moved to California to harvest crops for farm owners. They traveled from one farm to another, harvesting grapes, lettuce, and other crops (Levy & Chavez, 1975). As migrant workers, the work was difficult, wages were low, and they had no permanent home. They lived in dirty, crowded camps without bathrooms, electricity, or running water.

The profound poverty of his childhood left a deep impression on Chávez. As a child, he never stayed in one place long enough to attend school or make any friends (McGregor, 2000). He learned to read and write from his grandmother. As devout Roman Catholics, Chávez' mother and grandmother made certain that he and his siblings had a strong religious upbringing (Dalton, 2003). As a result, he became a man who relied on his faith for strength and direction. His spiritual beliefs were the guiding force in his everyday life and also influenced his political perspective. He believed so staunchly in animal rights that he became a vegan (Kahn, 2011).

After serving in the United States Navy in the Second World War, Chávez returned to San Jose, California, where his family had settled. Father Donald McDonnell, a local priest, introduced him to the writings of Mohandas Gandhi and Saint Francis of Assisi (Burt, 2007). With these teachings came the concept that nonviolence could be an active force for positive change. Chávez summed up his beliefs as follows, "Once people understand the strength of nonviolence, the force it generates, the love it creates, the response it brings from the total community, they will not easily abandon it" (as cited in McGregor, 2000, p. 82).

Through his association with Father McDonnell, Chávez met Fred Ross, who was an organizer for the Community Service Organization (CSO), a barrio-based self-help group (Burt, 2007). Ross was in San Jose to recruit members for the CSO, which assisted immigrants with immigration, tax problems, discrimination, and police violence. Chávez was impressed with Ross, and a lifelong friendship developed between the two men. Within several months of meeting Ross, Chávez became a full-time organizer with the CSO (Ross, 1989). He coordinated voter registration drives, battled racial and economic discrimination, started new chapters throughout Arizona and California, and eventually became president of the organization.

Through his work with the CSO, Chávez became familiar with the problems that challenged urban minorities (Ross, 1989). He came to understand that the poor and under-educated needed assistance, regardless of whether they were farm workers or city dwellers. However, his focus remained on helping the migrant workers.

While at the CSO, Chávez formed a friendship with fellow co-worker Dolores Huerta. In 1962, he resigned from the CSO and founded the National Farm Workers Association (NFWA) with Huerta (Dalton, 2003).

In 1965, the Agricultural Workers Organizing Committee (AWOC), a union group that was led by Philip Vera Cruz, went on strike when the Delano grape growers decreased their pay rates during the harvest season (Ferriss & Sandoval, 1997). Chávez, Huerta, and other leaders of the NFWA met with several National Farm Labor Union organizers, including Vera Cruz. They decided to join together in striking against the grape growers, an action which eventually led to the merging of both unions to become the United Farm Workers (UFW). Within months, the historic farm workers' march from Delano to Sacramento, the California State Capitol, took place, as led by Chávez.

Based on his appreciation of nonviolent protest, Chávez strategized on how to best employ the methods of other leaders, such as Gandhi and Martin Luther King, Jr. (Holmes, 1990). In addition to having farm workers go on strike, Chávez decided to ask American shoppers to help the farm workers by refusing to buy grapes. The incident became known as the "Delano grape boycott," and in the end, over 17 million Americans had supported it (Rosales, 2012). By 1970, the farm workers finally won a contract with the major grape growers in California. It was the first union contract between growers and a farm workers' union in United States' history (Soto, 2003). These results solidified Chávez' commitment to nonviolent protest, and he said,

> Nonviolence is a very powerful weapon. Most people don't understand the power of nonviolence and tend to be amazed by the

> whole idea. Those who have been involved in bringing about change and see the difference between violence and nonviolence are firmly committed to a lifetime of nonviolence, not because it is easy or because it is cowardly, but because it is an effective and very powerful way. (Go Serve, 2012, p. 1)

In February of 1968, Chávez began the first of several public hunger strikes that he was to conduct over the course of his lifetime (Shaw, 2008). Chávez believed that fasting was a means of strengthening the spirit. He recognized that a public fast could draw attention and support for his cause on a national scale. During his first fast, letters and calls of support came from all over the United States. Civil rights leader Martin Luther King, Jr. and presidential candidate Robert Kennedy sent words of encouragement to Chávez. Across the nation, the news channels ran updates almost every night. Kennedy flew to California to join Chávez in the breaking of his fast, which ended with an outdoor Roman Catholic Mass. During the fast, Chávez had lost 35 pounds in 25 days (Chávez, Jensen, & Hammerback, 2002). Too weak to stand or speak, a message that was written by Chávez was read by his friend, Reverend James Drake. Part of the speech epitomized Chávez' perspective on hunger striking:

> I do not want any of you to be deceived about the Fast. The strict Fast of water only which I undertook on February 15 ended after the 21st day because of the advise of our doctor, James McKnight, and other physicians. Since that time I have been taking liquids in order to prevent serious damage to my kidneys. We are gathered here today not so much to observe the end of the Fast but because we are family bound in a common struggle for justice. We are a Union family celebrating our unity and the nonviolent nature of our movement. Perhaps in the future we will come together at other times and places to break bread and renew our courage and to celebrate important victories. The Fast has had different meanings for different people. Some of you may still wonder about its meaning and importance. It was not intended as a pressure against any growers. For that reason we have suspended negotiations and arbitration proceedings and relaxed the militant picketing and boycotting of the strike during this period. I undertook this Fast

> because my heart was filled with grief and pain for the sufferings of farm workers. The Fast was first for me and then for all of us in this Union. It was a Fast for nonviolence and a call to sacrifice. (as cited in Gottheimer, 2003, p.316)

Chávez next hunger strike occurred in 1970. He called it a fast of “thanksgiving and hope” to prepare for a period of pre-arranged mass civil disobedience by the farm workers (as cited in Shaw, 2008, p. 92). They were protesting a court injunction that prevented them from picketing a lettuce grower.

In 1972, Chávez began a hunger strike to protest Arizona’s passage of legislation that prohibited boycotts and strikes by farm workers during the harvest seasons (Shaw, 2008). On the fifth day of his fast, he was approached by some of his supporters who told him to give up his fast because the Arizona law would never be overturned. Chávez responded, “Si se puede” or “Yes, it can be done” (as cited in Shaw, 2008, p. 92). This became the inspirational slogan for UFW as well as numerous other organizations, and was used in Barack Obama’s 2008 presidential campaign as “Yes we can.” Under orders from his doctor, Chávez ended the fast in front of four thousand farm workers.

In July of 1988, sixty-one-year old Chávez began one of his most highly publicized fasts to protest the use of pesticides in the fields where farmworkers worked (Shaw, 2008). Chávez had been concerned for decades about farm workers’ exposure to pesticides and he hoped that his “Fast for Life” would cause growers to reduce the use of pesticides (Shaw, 2008, p. 92). During his fast, the national news ran daily reports showing nightly masses with thousands of people. Chávez, who lost 30 pounds during the 36-day fast, refused to stop although he grew near death. At one point, other UFW leaders met with Chávez and pleaded that he end the fast, but he declined. According to historian Randi Shaw (2008), “The UFW leader remained frustrated by the growers’ lack of response to his spiritual act” (p. 92).

When Chávez finally broke down and ended the fast, there was eight thousand people in attendance, including Ethel Kennedy, the Kennedy children, Reverend Jesse Jackson, and James Olmos. Chávez, who was too weak to speak, had a statement read which said that other union supporters would continue to fast in three day increments to “keep the chain of suffering alive” (as cited in Chavez at al., 2002, p. 160). The Reverend Jesse Jackson took up the first three-day fast, followed by fasts by several celebrities and civil rights activists, including Martin Sheen, Edward Olmos, Emilio Estevez, Whoopi Goldberg, Carly Simon, Robert Blake, and Kerry Kennedy (Bishop, 1988; Shaw, 2008). This type of hunger strike became known as a “rolling fast” (Shaw, 2008, p. 93).

Chávez’ repeated and lengthy fasts weakened his overall health and was a contributing factor to his death in 1993 (Castelli, 1995). His dedication to using hunger striking as a means of nonviolent protest helped make him one of the most influential civil rights leaders in U.S. history. Additionally, he is credited with drawing attention to hunger striking as a “spiritual fast” and with influencing political activists to hunger strike in his legacy (Shaw, 2008, p. 93).

Guillermo Farinas

Guillermo Farinas is a Cuban psychologist and political dissident who was born in Santa Clara, Cuba in 1962. As a young man, he was a soldier and was wounded in battle in Angola, Southern Africa. Farinas spent 11 years in prison between 1995 and 2011 and conducted 24 hunger strikes to protest various aspects of the Cuban regime (AFP, 2012; Sonenklar, 2011).

One of Farinas’ most highly publicized hunger strikes occurred in 2006, when he held a seven-month strike to protest against the Internet censorship in Cuba. When he ended the strike in September of 2006, he had severe health problems, some of which were secondary to starvation (Reporters Without Borders [RWB], 2007). According to doctors, he was suffering from fever, convulsions, kidney problems, a swollen abdomen, and a heart disorder. His hunger strike received worldwide attention and he was awarded the Cyber-Freedom Prize from Reporters Without Borders (RWB, 2006) and the International Human Rights Award at Weimar, Germany (Muhe, 2006).

On February 26, 2010, Farinas began a thirst strike to protest the death of fellow dissident Orlando Zapata (Israel, 2010). Zapata had died three days earlier in a Cuban prison after fasting for more than 80 days (BBC News, 2010). Zapata’s hunger strike had been a protest against the Cuban government for having denied him the right to wear white dissident clothes instead of the designated prisoner uniform. Zapata had also been demonstrating against the living conditions of the other prisoners, 26 of whom were in ill-health and in need of medical attention (Lamrani, 2010). During Farinas' thirst strike, he asked for the release of those twenty-six other prisoners (Pérez-Stable & Velasco, 2010). Farinas told a local Cuban reporter, "If they free the 10 or 12 prisoners most in need of medical care, I would abandon my protest so that the government can negotiate with the church the release of the rest on another timetable and without pressure" (as cited in Pérez-Stable & Velasco, 2010, p. 142). Farinas' thirst strike lasted 134 days (Sanchez, 2010).

For his efforts, Farinas was awarded the Sakharov Prize for Freedom of Thought from the European Parliament (Atkeson, 2011). (BBC News, 2012). He was unable to attend because the Cuban government would not allow him to leave Cuba to collect the award. In response, Farinas said,

> Nothing has changed in the autocratic system ruling my country. My deepest hope is that you will not allow yourselves to be deceived by the siren songs of a cruel regime practising 'wild communism.' In the minds of Cuba's current rulers, we Cuban citizens are just like the slaves from whom I am descended, kidnapped in Africa and brought to the Americas by force. (as cited in BBC News, 2012,¶ 10)

On 3 June 2011, Farinas began a hunger strike to protest the Cuban authorities' response to fellow dissident Juan Wilfredo Soto's death. Farinas called for those responsible for the alleged police beating of Soto three days earlier to be brought to justice. He also demanded for the Cuban government to stop using violent means in its approach to nonviolent opposition (AFP, 2012).

The Dalai Lama

"Lama" is a title for a Tibetan teacher of the dharma, a concept in Indian philosophy and religion which asserts that certain behaviors are necessary for the maintenance of the natural order. The Tibetan word *lama* is similar to the Sanskrit term *guru* (Snellgrove, 2003). Historically, the term was used for venerated spiritual masters and heads of monasteries (Korom, 1997). In modern times, it is an honorific title conferred upon monks, nuns, and advanced tantric practitioners to designate that a certain level of spiritual attainment had been achieved, and an authority to teach. It is also used as a part of a title, as in the "Dalai Lama."

The Dalai Lamas are the most influential figures in the Gelugpa lineage of Tibetan Buddhism (Lama, 1990). As of 2012, the fourteenth and current Dalai Lama was Tenzin Gyatso, born on July 6, 1935. He, and all of the Dalai Lamas who lived before him, have been referred to simply as *the Dalai Lama.* Tibetans traditionally believe him to be the reincarnation of his predecessors and the manifestation of the Bodhisattva of Compassion. The Dalai Lama has expressed a humble view of his position, and he said in *The New York Times,* "I am a simple Buddhist monk, no more, no less" (Wong & Olesen, 2011,¶ 1).

The Dalai Lama is well known for his lifelong advocacy for all Tibetans, regardless of whether they live inside and outside of Tibet (Lama, 1990). The government of Beijing, China, which has ruled Tibet with a heavy hand since invading it in 1951, considers the Dalai Lama a traitor for advocating Tibetan self-rule. The Dalai Lama lived in Tibet until 1959, when China forced his exile after a failed uprising. He fled to India with a few hundred of his followers and set up a base in Dharamshala, a town in the Himalayan foothills about 250 miles north of New Delhi. In 1989, he won the Nobel Peace Prize for his efforts.

None of the Dalai Lamas have ever undertaken a hunger strike. The current Dalai Lama is being discussed here because of his opinion on hunger striking, a position which many people have found difficult to understand. Additionally, some of his Tibetan Buddhist followers have taken part in hunger strikes.

In general, the Dalai Lama has not supported prolonged hunger strikes, and he has also criticized fasting to death, sometimes called "hunger striking unto death" (Ardley, 2002, p. 55). As devoted as Tibetans are to the Dalai Lama, this has not prevented them from hunger striking. One of the first well-publicized Tibetan hunger strikes was at the New Delhi offices of the United Nations in 1977. The strike was so successful in garnering media attention that it encouraged other Tibetan activists to follow suit.

In addition to hunger striking, Tibetan activists have taken part in other acts of asceticism, most notably self-immolation, the act of setting oneself on fire, often as a form of protest or for the purposes of martyrdom or suicide. As previously discussed in chapter nine, self-immolation is a centuries-long tradition in some cultures, while in modern times it has become a type of radical political protest. In some Buddhist teachings, self-immolation is thought of as a way of sacrificing oneself to the Buddha (Ardley, 2002).

In 2011, a wave of self-immolations occurred in Tibet, revealing the desperation among the youth after enduring 60 years of being under China's rule. In that he is Tibet's spiritual leader, the rampant self-immolations raised moral and policy dilemmas for the Dalai Lama. As the self-immolations continued, the deaths poised theological questions about nonviolence and highlighted a longstanding schism between the Dalai Lama's soft-spoken approach and younger activists who wanted to fight for Tibet's independence.

In October of 2011, after nine Tibetan nuns self-immolated while protesting the Chinese rule, the Dalai Lama held a 90-minute-long service at his Tsuglakhang Temple in Dharamshala (Wong & Olesen, 2011). During the event, he called for a day-long fast and prayer service. Monks and nuns, school students, local Tibetans, and other supporters were all in attendance. The event drew worldwide media attention and Beijing authorities criticized the Dalai Lama's support as inciting "terrorism in disguise" (as cited in Wong & Olesen, 2011, | 3).

Some scholars are perplexed by the Dalai Lama's stand on hunger striking because of his contradictory comments and his own practice of fasting (Ardley, 2002; Koehn & Cheng, 1999). On one occasion, he stated he was against hunger strikes because such acts were violence against oneself, but he added that he could not suggest an alternative and, in fact, was "confused" by the matter (as cited in Koehn & Cheng, 1999, p. 194). Furthermore, the Dalai Lama has praised the motivation and determination of hunger strikers. He has long spoken of his admiration for Gandhi, who remains one of the strongest historical advocates of fasting for religious and political reasons.

The fast that is practiced regularly by the Dalai Lama is known in Buddhism as *nyungne.* It varies in custom and severity but usually lasts between two and three days. The type of nyungne that is performed by the Dalai Lama involves eating one meal on the first day and fasting completely on the second day (Rinpoche, 2009). The Dalai Lamas are known to assign fasts to laity who are seeking solutions to particular problems (Gyatso & Havnevik, 2005). There are other types of nyungne fasts that are assigned to monastics. For example, nuns in Labrang follow a complicated ritual that calls for fasting during the two weeks of the waxing moon on alternate days, taking no food or water for twenty-four hours and observing silence on those days except for the chanting of mantras and prayers.

All of the Dalai Lamas have practiced fasting and have supervised the fasting of their followers. The current Dalai Lama is no exception. In 2009, he wrote the introduction for Wangchen Rinpoche's book *Buddhist Fasting Practice: The Nyungne Method of Thousand-Armed Chenrezig.* The Dalai Lama emphasized the significance of fasting in Tibetan Buddhism and said,

> The fasting practice of Nyungne is a well known, very popular, and profound purification practice that is widely performed in Tibet… Those who wish to make their human life meaningful must do one Nyungne practice at the very least. (Dalai Lama, 2009, p. 1)

More recently, the Dalai Lama's position on hunger striking has become more supportive. On February 18, 2012, he presided over a day long hunger strike held at the Tibetan Parliament in Dharamshala. The hunger strike was held on the day of the Tibetan Water-Dragon New Year and the members of the Tibetan Parliament-in-Exile undertook the day-long hunger strike to express solidarity with the Tibetans living in Tibet (Central Tibetan Administration, 2012).

Guantánamo Bay Hunger Strikes

The Guantánamo Bay detention camp is a detainment and interrogation facility operated by the United States located within Guantánamo Bay Naval Base in Cuba. The facility was established in 2002 by the Bush Administration to hold detainees from the war in Afghanistan, and later Iraq. As of April of 2012, 779 people had been sent to Guantánamo Bay since its opening and 169 detainees remained there (Scheinkman, Williams, McLean, & Ashkenas, 2011). According to Red Cross inspectors, released detainees alleged acts of torture, including sleep deprivation, beatings, isolation, and religious persecution (Lewis, 2004). Many of Muslim detainees reported that interrogators destroyed copies of the Qur'an as an interrogation tactic (Lewis, 2004).

In 2005, detainees at Guantánamo initiated two hunger strikes in protest of their treatment. The number of strikers peaked at 131 around September of that year (Golden, 2006). By December of 2005, there were eighty-four hunger strikers fasting as of Christmas Day.

On February 9, 2006, *The New York Times* reported that hunger strikers in Guantánamo were being strapped into restraining chairs for hours at a time and were being force-fed (Golden, 2006). The authorities at the camp said that the prisoners were being contained in restraints in fear that—if they were left alone—they would vomit up the food in suicide attempts.

The detainees' lawyers called the force-feeding brutal and inhumane and claimed that other coercive methods were used, such as placing the men in cold air-conditioned isolation cells. William Winkenwerder Jr., assistant secretary of defense for health affairs, responded, "There is a moral question… Do you allow a person to commit suicide? Or do you take steps to protect their health and preserve their life?" (as cited in Golden, 2006, K 10).

In an article in the September 2006 issue of the *New England Journal of Medicine,* George J. Annas discussed the medical ethics of requiring doctors to provide physician-supervised force-feeding of the hunger-striking Guantánamo Bay detainees. Annas (2006) questioned both the legal and ethical foundation for physician participation in force-feeding and said that, "Military physicians cannot follow military orders to force-feed competent prisoners without violating basic precepts of medical ethics never to harm them by means of their medical knowledge" (p. 1381). In his article, Annas described the chair that the detainees had been restrained in as "a padded cell on wheels" (2006, p. 1377). At the height of the hunger strikes and force-feedings, the Guantánamo facility had 25 of the chairs in use.

Legislation Pertaining to Hunger Striking

Hunger striking has become such a common phenomenon that international laws have been adopted to address the health and general welfare of incarcerated hunger strikers. For example, Article 6 of the 1975 *World Medical Association Tokyo Declaration* stated that physicians can undertake force-feeding under certain conditions and only where a second, independent physician is consulted and agrees to the procedure.

Part of the legislation reads as follows:

> Where a prisoner refuses nourishment and is considered by the physician as capable of forming an unimpaired and rational judgment concerning the consequences of such a voluntary refusal of nourishment, he or she shall not be fed artificially. The decision as to the capacity of the prisoner to form such a judgment should be confirmed by at least one other independent physician. The consequences of the refusal of nourishment shall be explained by the physician to the prisoner. (World Medical Association [WMA], 2011, ¶ 6)

In 1991, the World Medical Association (WMA) wrote the *Declaration of Malta on Hunger Strikers* which dictated the treatment of hunger strikers. It stated that force feeding be considered a form of inhumane and degrading treatment (WMA, 2011). Although this body of legislation had some influence, physicians did not necessarily adhere to it. Case in point, the American Medical Association is a member of the WMA, but the AMA's members are not bound by the WMA's decisions, and neither organization has formal legal powers.

The U.S. Code of Federal Regulations set its own mandates for inmate hunger strikes which stated, "It is the responsibility of the Bureau of Prisons to monitor the health and welfare of individual inmates, and to ensure that procedures are pursued to preserve life." It further provided that when "a medical necessity for immediate treatment of a life or health threatening situation exists, the physician may order that treatment be administered without the consent of the inmate" (GPO Access, 1980). This piece of legislation is the caveat frequently employed by U.S. physicians who have chosen to force-feed hunger strikers.

As long as there are hunger strikes, government officials will most likely continue to devise ways to end them. Force-feeding becomes considerably more difficult when the hunger striker is not being held in a detention facility. In order to circumvent this problem, some governments have taken to arresting the hunger striker with charges of attempted suicide, an act which is illegal in most countries (Ramachandran, 2011). Once incarcerated, the hunger striker is then force-fed.

The Prevalence of Contemporary Hunger Strikes

In contemporary society, hunger striking is more widespread than ever before. Nearly every day in the news, there are several individuals and/or organizations that are undertaking a hunger strike in the quest for political or social justice.

Using 2011 as an example, there were frequently hunger strikes conducted by a wide range of individuals and groups. The following represents a small sample of the hunger strikes that occurred throughout the world in 2011.

For example, in late September of 2011, prisoners in jails across Israel launched a hunger strike to protest harsh prison conditions, in particular the practice of extended solitary confinement (Ma’an News, 2011).

Nearly 12,000 California inmates went on hunger strikes in October of 2011, asking for the abolition of long-term solitary confinement and gang profiling (Lavender, 2011). In November on 2011, over 1,000 inmates in India’s West Bengal prison went on a collective hunger strike, demanding speedier trials after some of them had spent as long as five years awaiting trial (Bhattasali, 2011).

In a political context, fasting for change has been a powerful tool used by a wide variety of populations. In November of 2011, the All Government Teachers’ Association in Pakistan went on a hunger strike after their contract negotiations stalled over issues such as restructuring teachers’ time scale and compensation (Daily Times, 2011). Also during November, a Romanian mayor went on a hunger strike to protest against cuts in heating subsidies imposed on his city under a government austerity drive (Patran, 2011). The mayor, Florin Cazacu, said 10,000 residents in his central Romanian town of Brad were without heat because the town lacked the $925,000 needed to buy fuel oil for the winter season.

Hunger striking has also been used by journalists to protest violations of freedom of speech. In October of 2011, Venezuelan newspaper editor Leocenis Garcia was jailed after being accused of insulting public officials after making negative comments about President Hugo Chavez (Toothaker, 2011). He went on a two week hunger strike demanding the charges be dropped.

A number of political protesters staged dramatic hunger strikes in India during 2011. In August of 2011, activist Anna Hazare held a 12-day hunger strike in Ramlila Maidan, Delhi to pressure the Indian government to pass a proposed anti-corruption law. (BBC Mobile, 2011). In support of Hazare's strike, tens of thousands of people attended protests across India. In February of 2011, 34-year-old Swami Nigamanand, a well-known sadhu, went on a fast unto death to protest against illegal mining on the bank of the Ganga in Haridwar (NDTV, 2011). Nigamanand was declared dead the following June 13, after fasting for 115 days.

When considering a timeline of hunger strikes, certain themes emerge such as the association with inequality and the empowerment of disenfranchised individuals and groups. In this manner, hunger striking represents a powerful form of protest which with to address alleged oppressive political and social conditions.

Political Fasting

Throughout the ages, fasting has been associated with politics. Rulers often forbade fasting due to its religious connotations. For example, in the Middle Ages, Henry VIII abolished fasting outside of Christmas, Easter, and Lent (Rogers, 1976). In the place of private fasting, he instituted public fasts, called for at times of great stress, such as during a plague or under the threat of war. Such public fasts continued in England and throughout Europe, and were eventually replicated in America.

Before the Pilgrim Fathers set sail for the new world in the 1600s, they held three public fasts (Martyn, 1867). The first was held in Holland where they prayed and fasted for guidance with regards to their impending journey. The second fast was held in preparation for their approaching departure. As a final gesture and farewell to England, they fasted for the third time just prior to setting sail (Rogers, 1976).

Proclamations of fasting and prayer played an important role in the birth and development of government in the United States (Classic Works of Apologetics, 2011). The custom continued a longstanding tradition practiced by the Church of England and British Monarchy dating back to the 1600s (Cogswell, Cust, & Lake, 2011).

In the United States, the practice of calling for a "Day of Humiliation, Fasting, and Prayer" started with revolutionary times. According to psychologist and historian John S. Uebersax (2012),

> Since 1952, the President of the United States has, by law, annually issued a proclamation recommending a National Day of Prayer. This

> seeks to revive a similar practice that emerged in Revolutionary times, and again in the Civil War. The modern proclamations, however, differ in important ways from the earlier ones. The main difference is evident in the change of titles—from the earlier ‘Day of Humiliation, Fasting, and Prayer’ to the modern ‘National Day of Prayer.’ The earlier proclamations emphasized *humiliation*—understood as including a deep conviction of God’s Providential sovereignty in all things, recognition that calamities may express God’s chastisements, expression of guilt, sorrow for sins, and earnest pledge for reformation. (¶ 1)

The list of United States Presidents who called for a “Day of Humiliation, Fasting, and Prayer” included John Adams, James Madison, John Tyler, Abraham Lincoln, Woodrow Wilson, and Ronald Reagan (Woolley & Peters, 2012). Additionally, other government officials called for similar observances. For example, in 1775, the 2nd Continental Congress issued a proclamation recommending “a day of publick humiliation, fasting, and prayer” (as cited in Davis, 2000, p. 82). As the newly appointed Commander-in-Chief of the Continental Army, George Washington wrote,

> The Honorable Congress having recommended it to the United States to set apart Thursday the 6th of May next to be observed as a day of fasting, humiliation and prayer, to acknowledge the gracious interpositions of Providence; to deprecate deserved punishment for our Sins and Ingratitude, to unitedly implore the Protection of Heaven; Success to our Arms and the Arms of our Ally; The Commander in Chief enjoins a religious observance of said day and directs the Chaplains to prepare discourses proper for the occasion; strictly forbidding all recreations and unnecessary labor. (as cited in Espinosa, 2009, p. 77)

The Presidents who called for public fasting days often did so at times of national turmoil. During a period of discord between France and the United States in 1798, President John Adams declared “a day of solemn humiliation, fasting and prayer,” asking citizens of all faiths to pray for America’s protection from danger (as cited in Rosenfeld & Morgan, 1998, p. 50).

In 1863, after the civil war had been raging for two years, President Abraham Lincoln responded to a congressional recommendation and proclaimed a day of national fasting and prayer (Scott, 2010). According to Lincoln, “It behooves us… to humble ourselves before the offended Power, to confess our national sins, and to pray to the God that made us” (as cited in Kennedy & Newcombe, 2003, p. 214).

In June of 2011, Rick Perry, Governor of Texas, released a proclamation that declared August 6, 2011, a “day of prayer and fasting for our nation’s challenges” (Perry, 2011). To promote the event, Perry created a dedicated website where people could register, and asked participants to promise to fast for one day a week leading up to the day of the event (Root, 2011). According to Perry’s press release:

> Given the trials that have beset our country and world—from the global economic downturn to natural disasters, the lingering danger of terrorism and wars that endanger our troops in Iraq, Afghanistan and theaters of conflict around the globe, and the decline of our culture in the context of the demise of families—it seems imperative that the people of our nation should once again join together for a solemn day of prayer and fasting on behalf of our troubled nation. (Perry, 2011, ¶ 5)

In his news release, Perry recalled moments in U.S. history when leaders called on Americans to fast and pray for the good of the nation, including former Presidents John Adams and Abraham Lincoln.

Fasting to Protest World Hunger

In an effort to bring attention to the crisis of world hunger, Robert Pierce founded World Vision in the 1950s, a Christian humanitarian organization focused on feeding the poor (World Vision, 2012a). Pierce, an American evangelist and war correspondent, had been motivated to start the organization after traveling to China in 1947 and meeting young children who were starving. Since World Vision was started, individuals have donated millions of dollars to prevent world hunger. At the same time, a longstanding tradition of fasting was established to raise awareness of global hunger. For example, in 2008, over five hundred youth and leaders from twenty-five churches in New England joined together to experience hunger first-hand by fasting (World Vision, 2012b). That same year, similar events occurred all over the world.

In response to rapid growth, World Vision's president Walter Stanley Mooneyham founded World Vision International In 1977 (Lloyd, 1981). The main fundraising tool of the organization was the 30Hour and 40-Hour Famine Events. Typically, a group of people from a church or school would sign up to organize such an event, and then spend the next 30 or 40 hours abstaining from food in order to increase awareness about world hunger (Scoop Culture, 2004). Many organizations and individuals began holding annual famine events as a fundraising activity. In 2009, nearly 500,000 children across the United States participated in the 30 Hour Famine (Scoop Culture, 2008). The money raised went towards buying food for countries in need, such as Uganda and Haiti (Lin, 2009). As of 2012, famine events occurred in 21 countries, including Australia, New Zealand, and the United Kingdom (World Vision Canada, 2012).

Fasting as a means to increase awareness of world hunger has been practiced by numerous groups and institutions. In 1974, just a few weeks short of Thanksgiving, the United Nations held a World Food Conference in Rome to determine how to help the famine in Bangladesh (Alagmir, 1980). Representatives from 130 countries attended the summit (Ryan, 2005). In the United States, 250,000 people fasted in a show of support (Cott, 1975). Although the 1974 conference drew international media attention, over one million people died due to starvation in Bangladesh over the next few years (Sen, 1982).

In 2011, the U.S. House of Representatives passed deep budget cuts to programs aimed at alleviating hunger and poverty in the United States and around the world. In response, 6,000 people, many of them members of the anti-hunger group Bread for the World, vowed to fast for a week to protest the proposed cuts (Baragona, 2011; Klairmont, 2011). They were soon joined by numerous other groups, including the executives of MoveOn.org, Service Employees International Union, the Sojourners, and the Center for Community Change (Klairmont, 2011). Justin Ruben, executive director of MoveOn.org said, “I am fasting because this budget will leave pregnant women and children hungry, sick people without healthcare, children without pre-school and students without teachers-while giving tax breaks to those who caused this crises” (as cited in Klairmont, 2011, ¶ 6). Those fasting called on members of the

U.S. Congress to join them in the fast.

Conclusion

In some ways, hunger striking may be the most powerful application of fasting. Proof of this occurred in 1948 when Gandhi's hunger strike caused millions of Hindus and Muslims in India to cease their fighting (Homer, 1956). When an individual or group undertakes a hunger strike, there is always a profound effect. Theologian Elizabeth A. Castelli (1995) explained this phenomenon:

> I am thinking particularly about forms of ascetic discourse which involve some explicit form of cultural critique… These include the preparatory practices involved in Gandhian civil disobedience; the hunger strikes of imprisoned Irish Republican Army members fifteen years ago; the fasts of United Farm Workers leader César Chávez, whose death was accelerated by a constitution weakened by repeated and extended fasts; the hunger strikes of HIV-infected Haitian refugees in Guantanamo Bay, and of their supporters on college and university campuses across the United States. Does this asceticism contribute to something like historical closure, or rather the opening up of history toward some other kind of reality? (p. 181)

Castelli's discourse suggested a hunger strike has the potential to create paradigm shifts and alter reality. Sometimes the effect is immediate, such as the ceasing of an unfair action, and other times the effect is long reaching, such as a change in public policy and perception.

15

Criticisms and Contraindications of Fasting

> The notion that intermittent fasting promotes longevity is not
> merely a cultural belief shared by diverse civilizations
> throughout history; it is a scientific truth.
>
> —BETH LEVINE & GUIDO KROEMER (2008, p. 13)

Despite the popularity of fasting and its long history of being used in a variety of contexts, it is highly controversial. For example, fasting receives a great deal of criticism from mainstream medical professionals who claim that fasting is harmful because a person has no sustenance over the course of the fast and therefore is in starvation. These critics miss an important point; nutritional needs are different for everyone and many people are capable of going for days or even weeks without protein, carbohydrates, vitamins, minerals, or any other nutrients. In therapeutic fasting, participants are encouraged to eat properly before the fast, and blood work is evaluated to make sure the person is healthy prior to fasting.

A literature review indicated that the earliest criticisms of fasting began around the Middle Ages when women fasted to the extreme. The following represents those criticisms as well as others from medical and mental health professionals. Additionally, several contraindications of fasting are discussed.

Criticisms of Fasting in Religion

In spite of its antecedents, fasting has been long been associated with anorexia nervosa. In this context, fasting has been secularized and harshly criticized. In the quest to explain human behavior, modern science has attempted to apply contemporary mental health diagnoses to historic figures, such as the Buddha and the Catholic saints (Bynum, 1987; Olson, 2005; Vandereycken & van Deth, 1994).

The inquiry into the relationship between fasting and anorexia nervosa began during the Victorian era. From around 1850 to 1900, many women carefully concealed their appetite for food in fear that it would be misconstrued as a desire for sex (Brumberg, 1988). This initial suppression of appetite is thought to have been the beginning of the modern woman's quest for thinness through fasting. Since then, the argument as to whether fasting is pathological has continued unabated.

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (2000) does not officially included fasting as one of the diagnostic criteria for anorexia nervosa (restricting type). To qualify for this diagnosis, patients must display self-imposed weight loss due to dieting, vomiting, or other means (such as fasting), and weigh less than 85% of their expected weight. In therapeutic fasting, a person who meets the latter of this criterion would be excluded because fasting could impose a danger to that individual's health.

Modern psychiatry tends to view fasting and other ascetic practices as pathological (Fallon & Horwath, 1993). This is particularly true for more extreme forms of asceticism that are self-mortifying, such as long periods of fasting and self-inflicted pain. Following suit, most religions have adopted a similar stance towards asceticism, condemning extreme forms of it.

In his article *Asceticism,* Walter Kaelber (2005) stated that "pathological excesses have appeared in every tradition" (p. 529). Examples include recluses who some would consider agoraphobic to others who receive pleasure from self-inflicted pain. Kaelber warns against seeing all asceticism in this light because many forms do not indicate "neurosis or psychosis" (p. 529). According to Kaelber, "Yogic meditation, Christian monasticism, and Zen technique exemplify the major advances made by asceticism, both Eastern and Western in self-understanding and the effort to lift expression and make the unconscious conscious" (p. 529).

When reading about the extreme fasting and other activities of historical figures, it is easy to understand why such actions have been harshly criticized. In contemporary religions, it can also be difficult to understand and rationalize radical practices, such as self-immolation and fasting to death.

The Fasting Catholic Saints

Fasting has influenced the formation of major religions. At the same time, it has spurred major debates and altered the trajectory of organized religion. Many scholars credit the birth of these debates to the fasting ascetic saints of the Middle Ages. Because the saints fasted for extraordinary lengths of time, controversies arose as to whether their behavior was pathological. Furthermore, many religious leaders worried about the image it placed upon the Catholic Church (Bell, 1985; Brumberg, 1988; Bynum, 1987; Flinders, 1999; Vandereycken & van Deth, 1994). In 1902, William James (2007/1902) became one of first psychologists to discuss the saints when he offered the following:

> *Asceticism.*—The self-surrender may become so passionate as to turn into self-immolation. It may then so overrule the ordinary inhibitions of the flesh that the saint finds positive pleasure in sacrifice and asceticism, measuring and expressing as they do the degree of his loyalty to the higher power. (p. 300)

In order to establish a special relationship with God, many fasting saints went to extreme lengths. Some broke their fasts only when they received the holy Eucharist, a small piece of bread, or wine. Saint Angela of Foligno was said to have eaten nothing but the Eucharist for 12 years (Vandereycken & van Deth, 1994). Fasting for even longer periods was not uncommon as demonstrated by Saints Elisabeth of Reute, Nicholas of Flue, Domenica dal Paradiso, and Lidwina of Schiedam who claimed to have fasted for 15, 19, 20, and 28 years respectively (p. 24). It was not uncommon for a saint to fast to death, such as Columba of Rieti and Catherine of Siena, who died due to self-starvation (Bynum, 1987).

The Catholic Church discouraged extreme fasting and, in 1373, a clergyman sent Catherine of Siena a letter asking her to eat and break her fast (Vandereycken & van Deth, 1994, p. 25). Catherine’s response was that her fasting was a medical condition as opposed to a voluntary religious practice. Even though the Church was condemning fasting, some of its clergy praised it. One Church father, Tertullian said, “An emaciated body will more readily pass the narrow gate (of paradise), light body will resurrect more rapidly, and in the grave a wasted body will be preserved best" (quoted in Vandereycken & van Deth, 1994, p. 15).

The Influence of Fasting on Religion

Some scholars believe that the fasting saints influenced contemporary religions, such as Buddhism. Liz Wilson (2004), a professor of comparative religion at Miami University, claimed that the negative publicity about the Catholic saints caused Buddhist leaders to minimize the fact that fasting was actually one of the Buddha's main interests. Considering fasting from a Buddhist perspective can be problematic primarily because Siddhartha Gautama (the Buddha) had radical ascetic experiences, yet is said to have promoted moderate asceticism. Based on this discrepancy, the topic of fasting and other ascetic activities in Buddhism is an ongoing controversy (Gethin, 1998; Olson, 2005; Wilson, 2004).

Criticisms and Contraindications of Fasting in Medicine

Complications During Fasting

In the practice of medicine, fasting has received criticism for complications that have occurred during therapeutic fasting, including gout, orthostatic hypotension, hyponatremia, hypokalemia, and severe dehydration (Drenick, Blahd, & Tuttle, 1964; Kerndt, Naughton, Driscoll, & Loxterkamp, 1982; Lawlor & Wells, 1969). These complications have not changed since Lawlor and Wells wrote *Metabolic Hazards of Fasting* in 1969 and claimed that:

> Fasting is an effective method of treating obesity, and no serious metabolic disturbances were encountered when the fast lasted less than 40 days. However, in prolonged fasting (i.e. periods greater than 40 days) electrolyte disorders, protein deficiency, normochromic anemia and malabsorption of vitamin B12 were encountered. (p. 1148)

Most of these problems can be avoided or prevented in supervised therapeutic fasting. For example, if a patient begins to show indications of hypokalemia, an electrolyte disturbance, the fast can be discontinued if the condition worsens (Fuhrman, 1995).

Contraindications of Fasting

In all cases, the standards for proper fasting supervision dictate the use of a blood test prior to the fast to screen for factors such as adequate liver and kidney function (Fuhrman, 1995). Even people who want to fast for only one or two days at home for their first fast should be checked by a doctor beforehand. Individuals who have severe liver and kidney disease and certain types of cancer are often unsuitable candidates for fasting (Fuhrman, 1995; Goldhamer, 1987). Extreme weakness and muscular wasting in various diseases may also contraindicate fasting (Goldhamer, 1987). Other examples of conditions for which fasting is contraindicated include severe anemia, malnutrition, and porphyria (Fuhrman, 1995).

Fasting is generally not recommended for children or pregnant or lactating women. When fasting is performed by children and pregnant women, it should only be done for brief periods under strict medical supervision by an experienced doctor. Additionally, individuals who have the rare fatty acid deficiency of the enzyme medium-chain acyl-CoA dehydrogenase (MCAD) should not fast (Fuhrman, 1995). MCAD deficiency occurs in 1 in 17,000, which represents 0.0059% of the population, making it extremely rare (Grosse, Khoury, Greene, Crider, & Pollitt, 2006). Although commonly diagnosed in childhood, sometimes it goes undiagnosed until a person attempts to fast. This is because fatty acid oxidation is required as an alternative energy source during fasting. In individuals with MCAD deficiency, this conversion does not happen. Respiratory failure, seizures, and death can occur as the fast progresses in these individuals. Normally, ketones are excreted in the urine, but for those patients who have MCAD deficiency, ketones should be absent. Scientists have determined that a urinalysis is not an accurate screening tool for MCAD deficiency. Researchers have found that genetic testing is the only reliable way to screen for MCAD deficiency (Leydiker et al., 2011).

There are a number of mental health issues that may make fasting problematic or contraindicated. Obviously, someone with anorexia nervosa is not a suitable candidate for fasting. According to Alan Goldhamer (1987), “The greatest contraindication to fasting is fear. A lack of understanding of the fasting process can present insurmountable problems” (p. 11). Whereas fasting may help reduce anxiety in some cases, people who have anxiety disorders might react unfavorably to fasting. Research has shown that anxiety disorders are strongly associated with eating disorders (Sawaoka, Barnes, Blomquist, Masheb, & Grilo, 2011; Wonderlich & Mitchell, 1997). Due to this, someone who presents with extreme anxiety should receive appropriate screening prior to therapeutic fasting to rule out an eating disorder or food addiction. As discussed in chapter 12, psychological screening could help to determine if fasting was appropriate for individuals who binge eat or have food addictions.

Death During Fasting

Of the thousands of cases of fasting recorded in the scientific literature, approximately 30 deaths have been reported. The exact number is uncertain, primarily because it was sometimes unclear as to whether the participant died as a result of fasting or from long-standing health problems (Cubberley, Polster, & Schulman, 1965; Kahan, 1968; Norbury, 1964; Runcie & Thomson, 1970; Spencer, 1968). In the majority of cases, fasting itself was not considered the cause of death. In summing up the cause of the death with nine of the patients, Mark Carney (2010) said,

> In the majority of these nine deaths, it was determined that the patients most likely would have died within a close time frame of when the fast occurred due to their severe illnesses, such as advanced heart failure or end-stage renal disease. In other words, these individuals probably would have died regardless of whether they were undertaking a fast or utilizing any other therapies. Furthermore, even though the patients died, in some cases it was determined that during the fast, their clinical conditions improved considerably. (p. 16)

In discussing the hazards of fasting, researchers Stewart and Fleming (1969) wrote, “Fasting short of emaciation is not hazardous; if death results, reasons other than those of the fast should be considered before concluding that all supervised fasts should be discouraged” (p. 1154).

Complications can occur at the end of the fast, when food is first introduced. Two of the reported deaths that were associated with fasting occurred after the participants broke the fasts with heavy meals (Buhner, 2012). Breaking a fast is an important part of the procedure. If certain foods are introduced too soon during the refeeding stage, gastrointestinal problems can occur. For example, spicy food and condiments, such as salt and pepper, can damage the stomach lining during early refeeding because the mucosal barrier diminishes during fasting and takes time to return to normal (Fuhrman, 1995). When breaking a fast, it is always advisable to follow the protocol set forth by the supervising physician or fasting coach.

Toxicity During Fasting

Fasting has been cited as an effective therapy for removing toxins from the body. Alan Goldhamer (2010) said, “Fasting is generally thought of as a tool to facilitate detoxification, promoting the mobilization and elimination of endogenous substances such as cholesterol and uric acid and exogenous substances such as dioxin, PCBs, and other toxic chemical residue” (¶9). While research has suggested that fasting may decrease levels of substances like dioxin and polychlorinated biphenyls (PCBs) in the body (Immamura & Tung, 1984), studies have also shown that fasting during exposure to certain toxins can actually potentiate their toxicity (Conolly & Jaeger, 1977).

Fasting for as little as a few hours can cause the release of environmental toxins that are stored in fat cells (Chevrier et al., 2000; Imbeault et al., 2002). When these toxins are released from the points of storage throughout the body, they can move to other areas and cause damage (Hoffer, 2005).

In one study, hexachlorocyclohexane that was stored in the fat cells in female mice was released by fasting and made its way to uterine tissue where it exhibited estrogen-like effects (Bigsby, Caperell-Grant, & Madhukar, 1997). The estrogen-simulating effects of this toxin and others are thought to contribute to the development of breast cancer. In another study, the release of a pesticide that was stored in the fat cells in rats resulted in nerve damage as a side effect of fasting (Dale, Gaines, & Hayes, 1962).

There are a number of strategies that can help to reduce toxins in the body prior to fasting, such as switching to a plant-based diet for a period of time before fasting. Choosing the appropriate protocol would involve consulting with a health practitioner who can ascertain the necessary tests and develop a treatment plan.

Side-Effects of Fasting

As a therapeutic procedure, fasting is generally safe and effective. Common side effects include hypoglycemia, constipation, acidosis, headaches, insomnia, dizziness, nausea, and body aches (Salloum, 1992). Less common side effects include vomiting, halitosis, hiccups, coated tongue, diarrhea, and tinnitus (Kerndt et al., 1982; Salloum, 1992). Side effects during fasting are rarely serious, but fasting can uncover diseases and other conditions that were previously subclinical (Duncan, 1963).

In terms of mental health, the primary side-effect from fasting is irritability and fluctuations in mood. However, research indicates that irritability and moodiness tend to subside after the first few days of the fast (Fredricks, 2011). In addition, eating a high nutrient density diet has been shown to reduce hunger and irritability, and improve mood (Fuhrman, Sarter, Glaser, & Acocella, 2010). Based on this, eating a plant-based diet prior to fasting could potentially increase feelings of well-being during a fast.

Fasting has garnered positive attention as a potential alternative to pharmacology, but—like other alternative therapies—this can place it at odds with those who support conventional drug treatment and contemporary Western medicine. Fasting can impart feelings of euphoria, but it can also be uncomfortable and time consuming, which may make medication appear to be a reasonable alternative. However, in the case of some problems, such as depression, the risks of drug therapy may outweigh the benefits.

Conclusion

Although there are some risks to fasting, there are many potential health benefits when it is part of a well-planned and well-executed program. As with any powerful therapy, caution should be exercised. When conducted incorrectly, there are dangerous side effects of fasting, including death.

At the time of publication of this book, Alan Goldhamer, John Finnell, Nimrod Omer, Margaret Krize, and Ryan Bradley were in the process of completing a study on the safety and adverse effects of fasting as compared to dietary interventions (A. Goldhamer, personal communication, November 15, 2012). Their investigation examined the records of over 2,500 people who underwent in-patient fasting, dietary, and/or lifestyle interventions from 2005 to 2011. This was the first study that demonstrated the safety of water-only fasting across a large cohort. The complete results were expected to be published in early 2013.

Fasting is a natural function that has been practiced safely for thousands of years. Although fasting is considered to be an effective and natural way to cleanse the body of harmful toxins, it is important to know that it may have certain side effects and possible complications. Those complications can be prevented by careful preparation before the fasting begins and by consulting with a doctor who is trained in the supervision of fasting. By taking a few precautions and consulting with a doctor, virtually all the potential complications of fasting can be avoided.

16

Suggestions for Future Research on Fasting and Psychology

Fasting is the master key to mental and spiritual unfoldment and evolution.

—ARNOLD EHRET (1996/1922, p. 16)

The body of research that examines the impact of fasting on psychiatric disorders and emotional health is sorely lacking. What follows are several recommendations for future studies to evaluate the effects of fasting on mental health. It is important to note that this research should in many cases include measurements of religious and spiritual beliefs. This would be especially pertinent for certain theoretical models, such as transpersonal psychology, and for particular psychiatric conditions, such as eating disorders and addiction.

Fasting and Magnetic Resonance Imaging

Magnetic Resonance Imaging (MRI) is a medical imaging technique used in radiology to visualize the details of internal structures inside the body. Since it was first used in the early 1970s, MRI has developed to include other MRI-based imaging techniques, including magnetic resonance spectroscopic imaging (MRSI), and functional magnetic resonance imaging (fMRI), all of which provide radiographic images with varying degrees of detail (Agrawak & Mane, 2009). For example, MRSI can show images of cellular activity. MRI is sometimes used in research to show the effects of treatment interventions on the brain and other parts of the body.

Research that uses MRI of the brain pre-and postfasting might provide useful data to compare with participants' test results. The basic design of the study could involve the use of a number of self-report questionnaires. For example, the study could have a pretest and posttest with the Beck Depression Inventory (BDI-II), the Beck Anxiety Inventory (BAI), and the Multidimensional Health Locus of Control (MHLC), and would include the brain imaging to compare fasters with comparison participants.

The BAI, created by Aaron T. Beck, is a 21-question multiple-choice self-report inventory used for measuring the severity of an individual's anxiety. The BAI holds an average reliability coefficient of .92 and a test-retest reliability of .75 (de Beurs, Wilson, Chambless, Goldstein, & Feske, 1997; Leyfer, Ruberg, & Woodruff-Borden, 2006; Osman et al., 2002).

The internal consistency for the BDI-II is good (Cronbach's alpha = 0.85), meaning that the items on the inventory are highly correlated with each other (Ambrosini, Metz, Bianchi, Rabinovich, & Undie, 1991; Lovibond & Lovibond 1995; Naughton & Wiklund, 1993). Research has reported Cronbach's alphas ranging from .76 to .95 for psychiatric populations, and .73 to .92 for nonpsychiatric populations (Meites, 2009).

When evaluating the reliability of the MHLC, researchers have looked at the MHLC as a whole, as well as examining its three subscales. The evaluations have found that internal consistency for the MHLC is good, with Cronbach's alphas in the .60-.75 range, and test-retest stability coefficients ranging from .60-.70 (Wallston, 2005; Winefield, 1982). Reliability indices for the IHLC, CHLC, and PHLC subscales using Pearson's moment correlation have been reported at 0.60 ($p < 0.001$), 0.58 ($p < 0.002$), and 0.74 ($p < 0.001$), respectively (Moshki, Ghofranipour, Hajizadeh, & Azadfallah, 2007).

This research model could potentially offer answers as to why fasting helps alleviate thoughts and feelings of depression and its impact on the brain. Furthermore, the brain scans could be compared to scans from similar research, such as diet, meditation, prayer, exercise, and various complementary and alternative therapies.

Measuring Serotonin Levels While Fasting

Another important area of research would involve measuring serotonin levels in conjunction with questionnaires like the BDI-II, BAI, and MHLC pre and posttest. Serotonin is a hormone that is found in the pineal gland, blood platelets, the digestive tract, and the brain. Serotonin acts as a chemical messenger that transmits nerve signals between nerve cells.

Research has suggested that changes in serotonin levels in the brain in humans are associated with mood changes and depression (Shirley, Antonello, Arias, & Barone, 2006) and/or anxiety (Maximino, 2012). Scientists have developed a number of methods, which include:

- Measuring serotonin metabolites in the cerebrospinal fluid, urine, plasma, and platelets (Audhya, Adams, & Johansen, 2012)
- Measuring the number of imipramine binding sites on platelets (Zarpellon et al., 2008)
- Measuring the hormone prolactin after administration of the drug d-fenfluramine (Schweitzer, Morris, Hopwood, Maguire, & Norman, 2004)
- Measuring serotonin distribution in live cells with photon excitation (Botchway, Parker, Bisby, & Crisostomo, 2008)

If brain imaging or measurement of serotonin revealed significant changes at testing time two, it would be practical to consider the measurements again at 30 and/or 60 days to access any longer-lasting changes. Again, the participant's diet and exercise should be included in such an analysis as well as current medication.

Combining Medical Tests With Psychometric Measures

In addition to performing MRIs and measuring serotonin levels, a study design could include conventional medical testing combined with psychometric measures. By doing this, researchers can suggest correlations between psychological states and medical conditions. The following are some common measurements and tests that may be ordered when a patient is undergoing a supervised therapeutic fast:

- Routine urinalysis
- Blood pressure
- Pulse oximetry
- Temperature
- Weight
- Waist-to-hip ratio
- Electrocardiogram
- Bioimpedance analysis
- Complete blood count (CBC) with differential and platelets

- Comprehensive metabolic panel (CMP)
- Iron/total iron binding capacity
- Ferritin
- Thyroid panel
- Lipid panel

Less common tests that could provide important information include cardiodynamics and spirometry, used to evaluate the dynamics of the heart's action in pumping blood and the pulmonary function respectively.

Because certain nutrient deficiencies are associated with mental health problems, monitoring certain nutrient levels such as 25-hydroxy vitamin D, vitamin B12, and zinc and looking for correlations could also yield some useful data.

Dietary Considerations

Diet is a critical consideration when looking at the long-term success of fasting as a treatment for depression (Fuhrman, 1995). When considering both diet and fasting as a treatment for depression, the researcher must be careful to separate the two so that the effects of each can be accurately measured.

For example, because vegetarian diets have been associated with low depressive scores, it would be suspected that vegetarians will have longer lasting results from fasting than non-vegetarians (Beezhold, Johnston, & Daigle, 2010). Based on this, it might seem that it would be more difficult to locate and recruit depressed vegetarian fasting participants. However, veganism (a type of vegetarianism) has been associated with an increased risk of depression because vegans can be vitamin B12 deficient (Gilsing et al., 2010; Koebnick et al., 2005) and B12 deficiency has been associated with depression (Bottiglieri, 1996; Hintikka, Tolmunen, Tanskanen, & Viinamaki, 2003; Hutto, 1997; Miyake et al., 2006; Penninx et al., 2000).

In therapeutic fasting, doctors tend to recommend a vegan diet both before and after fasting. Additionally, the permanent adoption of a vegan diet is generally suggested in most cases postfast (Fuhrman, 1995; Goldhamer et al., 2002). Because of this, fasting participants who have had experience with therapeutic fasting may have a higher likelihood of being vegan. Due to these potentially confounding variables, a study that looked at diet might include measuring nutrient levels pre and postfast.

Anxiety Disorders and Fasting

Research examining the effects of fasting on anxiety could yield valuable information on how anxiety manifests in terms of food and attachment. A research design looking into fasting and anxiety could be a quasi-experimental repeated measures design, using the BAI in conjunction with the BDI-II and the MHLC (Form B).

The BDI-II would be used because anxiety and depression have been previously associated (Kasper, den Boer, & Ad Sitsen, 2007). Because eating disorders have been associated with both depression and anxiety, a psychometric measure for eating disorders could be included (Fairburn & Brownell, 2005). The Eating Disorder Examination Questionnaire (EDE-Q) could be a suitable choice because it is a self-report measure with good reliability. The internal consistency of the EDE-Q was high, with a Cronbach alpha coefficient for the global scale of 0.93 (Mond, Hay, Rodgers, Owen, & Beumont, 2004).

Bariatric Surgery Versus Fasting for Weight Loss

Bariatric surgery is a weight-reduction procedure performed on people who are obese. The surgery reduces the size of the stomach, either with an implanted medical device or via the removal of a portion of the stomach (Lenders et al., 2009). The procedure was first developed in the 1960s (Mason & Ito, 1967). In recent years, the number of bariatric surgeries that have been performed in the United States has increased dramatically, from 13,386 in 1998 (The Washington Times, 2005) to 220,000 in 2008 (Mann, 2009).

Prior to the introduction of bariatric surgery, fasting was used as a medical weight loss method for obese patients for much of the twentieth century. With the relatively recent increase in bariatric surgeries performed, research into the psychological differences between patients undergoing bariatric surgery and fasting patients could yield some useful results.

Of particular interest would be (a) comparing the levels of depression, anxiety, and locus of control and (b) screening for substance abuse and eating disorders. Pre-screening could follow current bariatric surgery protocols and the follow-up could look for transfer of addiction and/or weight regain, as either could be indicative of psychological disorders. The EDE-Q has also been used as a pre-screening tool in bariatric surgery (Hrabosky et al., 2008). In addition, any research into fasting for weight loss, whether from a medical or a psychological perspective, should consider the participant's diet at follow-up.

When either bariatric surgery or medically supervised fasting is used for weight loss, it is almost always used for obese patients. In most bariatric surgeries, the patients must be obese in order to qualify for the surgery (Lenders et al., 2009). Similarly, medically supervised fasting has historically been used for obese patients (Cavagnini et al., 1971; Runcie, 1973).

Obese participants represent a statistically sensitive population in research because a substantial percentage could potentially have binge eating disorders (de Zwaan, 2001; Hudson, Hiripi, Pope, & Kessler, 2005; Yanovski, 2003). Because of the manner in which fasting allows participants to examine their relationship with food, research into fasting as a treatment for eating disorders may be of special interest. However, research examining fasting and psychology will need to broaden substantially before this type of research can be conducted ethically and safely.

As discussed in chapter 12, psychometric tests for the assessment of eating disorders need to be refined and further developed in order to more accurately gather information on participants' previous fasting experience. As it stands, there currently is not an eating disorder questionnaire that adequately assesses for this phenomenon.

Qualitative Research and Fasting

Qualitative exploration of fasting and participant perceptions of the experience of fasting could be useful in accessing fasting from a variety of perspectives. However, some research using mixed-methods may need to be conducted in order to determine what qualitative methods would be most appropriate. In my personal fasting experience and from working with people who have fasted, individuals who are fasting sometimes have difficulty with expressive writing and can become nonverbal at different points during the fast. Unfortunately, postfasting recall is not much better. Since personal experience during the fast is of particular interest, this could be problematic for qualitative approaches that require interviewing, questionnaires, or surveys. Rather than using a phenomenological approach, researchers may find nonverbal means such as creative expression to be more productive of qualitative data for individuals who may become verbally reticent in a depressive mode.

Case study methods that are used with research regarding historical figures may also prove useful.

In spite of the fact that fasting participants can be nonverbal, gathering information with a questionnaire could be a valuable tool for evaluating the effectiveness of a study's design and provide data that could help to shape further research. The questions on the questionnaire are obviously going to depend on how much data the researcher already has, although asking questions the researcher already knows the answers to can help to determine how accurate the participant's perspective is. Some examples of questions that could be useful on a qualitative questionnaire in fasting research are as follows:

1. What was the length of your fast in days?
2. Was this your first fast?
3. If you fasted previously, how many times have you fasted?
4. Where did you do your fast this time?
    - ☐ At home
    - ☐ At home, but I used a Fasting Coach, Consultant, or Guide
    - ☐ At a Fasting Clinic
    - ☐ At a Fasting Retreat
5. If you fasted with a Fasting Coach, at a Clinic, or a Retreat, please provide their name:
6. What has your reason for fasting this time?
7. What has your experience of fasting been like?
8. How would you feel about fasting again in the future?
9. During or immediately following the fast, did you notice any changes in your mood? If yes, please explain:
    - ☐ depression
    - ☐ irritability
    - ☐ anxiety
    - ☐ sleep
    - ☐ consciousness/awareness
    - ☐ spirituality
10. If there is something that you experienced while fasting that you will

be incorporating into your life, please describe what that is:

It is important to tailor questions toward the research design as well as any future research under consideration. Furthermore, it is always helpful to have associates edit the questionnaire and study design.

An area of qualitative research that may yield interesting results is a life stories approach. This could be accomplished in a variety of ways, such as focusing on a specific area of interest. For example, political fasting, also known as hunger striking, might provide participants with stories of figures such as Mohandas Gandhi, Bobby Sands, Cesar Chávez, and Guillermo Farinas. A feminist approach could be incorporated while looking at the hunger striking suffragettes, such as Marion Wallace-Dunlop, Emmeline Pankhurst, Mary Clarke, Charlotte Marsh, Laura Ainsworth, Alice Paul, and Mary Leigh. The study’s focus could be refined to look at relationships within specific contexts. For example, the history of hunger striking in Ireland could be studied, examining how Bobby Sands and the Irish Ten were influenced by Thomas Ashe and Terence MacSwiney. Another study could examine the manner in which Marion Wallace-Dunlop and Shrimad Rajchandra influenced Gandhi’s decision to use fasting as a political tool. Gandhi once said he was persuaded to hunger strike by the actions of Wallace-Dunlop (as cited in Lennon, 2009, p. 14) but that he was also heavily influenced by Rajchandra, one of his spiritual teachers (Gandhi, 2008).

Another area of qualitative research on fasting could include the examination of mass fasting. This model could compare religious fasting, such as that of the Jains, to mass hunger striking, such as the 1989 student protests in China’s Tiananmen Square.

Clearly, there is a wealth of potential designs for research on fasting and psychology, both quantitative and qualitative. Further study will itself most likely suggest even more areas of interest.

Conclusion

Some of the ideas represented in the above research models would be useful to consider regardless of the study design. These include long-term follow-up, brain function, gender, locus of control, diet, and other aspects of lifestyle.

In addition to the aforementioned areas of inquiry, future research on fasting and psychology could investigate participant’s use of CAM. The investigation might include determining other CAM therapies used and if fasting was used as; (a) complementary, (b) alternative, or (c) integrative. This would help to determine how fasting fits into a personal healthcare regimen as well as its practicality as a therapeutic measure. Of course, the nature of the sample should be considered when including these additional variables as it could diminish any generalizability.

An obstacle with researching the effects of water-only fasting on mental health is finding participants who are willing to abstain from all ingestion of food and liquids except water, thereby making research challenging. Although there are fasting clinics located all over the world, accessing attendees can be problematic. Because of this, research on fasting is often limited to these facilities. In order to have access to a larger number of fasting participants, researchers may need to be resourceful and consider options such as online testing. As shown in the author’s own research, water-only fasting has the potential to be used safely in a research setting when a responsible protocol is used (Fredricks, 2011).

Doctors, scientists, and other professionals who are experts on fasting are quoted throughout this book. Most—if not all—of them recommend that fasting be performed in a supervised setting, which is sound advice. When it comes to conducting research on the medicinal effects of fasting, a clinical setting is most appropriate. However, for research that examines the psychological and spiritual effects of fasting, this may be a problematic, unnecessary hindrance. A large number of people fast at home for either spiritual or health reasons, and to ignore this population in favor of those in a clinical setting would be excluding an important segment of the population. By maintaining such an exclusion, an external threat to validity can occur because the sample is not representative. This may be particularly true with some experienced fasters, as they may shy away from a clinical setting. Of course, any time a study is measuring biological markers of medical conditions, it should be conducted in a clinical setting.

Another advantage of examining individuals who fast at home could be the discovery of what percentage of that population should be fasting in a clinical setting. Case in point, even the most experienced faster should consider supervision if he or she is experiencing a health problem. This would allow for the development of a treatment plan based on the results of tests ordered by the supervising physician.

17

The Psychospiritual Effects of Fasting

Fasting involves a component of both control and surrender. We are submitting to a discipline, surrendering our physical desires to a higher value.

—ORION GARLAND (2009, p. 113)

One of the most advantageous aspects of fasting is the effect it has on our emotional states. Although emotions often feel more intense during and after a fast, this phenomenon is part of a natural process. The more calm an individual remains during a fast, the easier it is for them to move through emotional experiences. Research has noted common emotional themes during fasting, most notably related to feelings of irritability and joy (Fredricks, 2011). The negative emotions that surface during fasting tend to be related to feelings of grief over the temporary loss of food.

One of the most prevailing beliefs of human nature is that people need food in order to survive. As noted in the hierarchy of needs as created by psychologist, Abraham Maslow (1943), food is associated to basic survival. In some instances, this need is so great it overshadows one's ability to see clearly. From the day we are born, the desire for food reigns dominant. The inner drive for food is almost constantly present on some level from the beginning to the end of life and rarely leaves. According to psychotherapist Stephen Harrod Buhner (2012), to the degree an individual's relationship with food operates on an unconscious level, fasting will be difficult. He claimed, "If you believe that food is love, stopping eating will be experienced by your deepest self as a denial of love" (p. 49).

Attachment to food is undeniable. As soon as an individual becomes attached to something, a situation is created in which he or she may have to grieve the loss of it. Because attachment to food is interrupted during a fast, grief is a significant part of the fasting experience. When individuals are deprived of food for a long enough period of time, a mourning process begins and unresolved trauma may surface.

The grief that is connected with fasting has the potential to create significant positive growth if participants are able to recognize their less productive attachments and let go of them. In his book *Prayer,* Ole Hallesby (1994/1931) explained how fasting assisted with detachment from mundane existence:

> The purpose of such abstinence for a longer or shorter period of time is to loosen to some degree the ties which bind us to the world of material things and our surroundings as a whole, in order that we may concentrate all our spiritual powers upon the unseen and eternal things. (p. 114)

If an individual associates food with love and nurturing, fasting will challenge the most fundamental of all belief systems. For those who have unconsciously avoided their feelings by using food, fasting provides them an opportunity to face the pain hidden beneath the relationship they have with food. Buhner (2012) explained how this happens:

> Fasting is deciding to take the veil from our eyes, to become intimate with ourselves. It is a decision to encounter the pain from childhood that we have hidden underneath our relationship with food, to give the hungry part of ourselves a voice that cannot be ignored. (p. 49)

For someone who uses food as a coping mechanism or expects it to fill an emotional void, fasting can reveal unhealthy habits. Lucia Glahn (2010) said, “Those who refrain from eating will become clearly aware of their own dependencies” (p. 206).

Fasting creates suffering on many levels, but the degree to which one is able to feel one’s suffering is parallel to one’s ability to feel joy. Fasting is an invitation to suffer in a very real sense, but as Buhner noted, “Paradoxically, in such an act we find new life, new direction and joy” (p. 32). John Firman and Ann Gila (2002) called this being “surprised by joy,” which is realized when our higher consciousness breaks into our awareness (p. 33). Firman and Gila pointed out that such experiences have the power to transform lives as a new realm of human experience is revealed.

Robert Assagioli (2007) suggested that these higher experiences activate feelings from the lower unconscious, thereby creating anxiety as we feel wounded, fearful, angry, and depressed. Similar to other consciousness-raising events such as mediation, fasting can potentially create psychological and spiritual disturbances. While fasting, the participant can feel blocked and may struggle to allow the release of whatever mechanisms are preventing access to a higher level of awareness. This struggle to integrate lower and higher states of consciousness during fasting may be most unpleasant, but the end results can be outstanding. Fasting is associated with exceptional human experiences because of the unique relationship it has with the psychospiritual aspects of human development.

The term *psychospiritual* is defined in a variety of ways, beyond the literal and conceptual reunion of the psyche and the spirit. In human development, it can defined as the relationship between self-concept, emotional well-being, sources of inspiration, as well as the meaning and purpose in one's life (Khalsa, 2005). Some clinicians have suggested that psychospiritual approaches to psychotherapy can help facility change on the deepest levels of consciousness (Khalsa, 2005; Mijares, 2005). Sharon G. Mijares (2005) explained a psychospiritual approach as follows:

> Many clients and therapists prefer an integrative treatment model because it also includes belief systems based on life's deeper meanings. A psychospiritual treatment model utilizes traditional approaches but also emphasizes theories and treatment paradigms based on the world's mythologies and religious traditions. (p. 76)

The goal of both the faster and the psychotherapist is to recognize which psychospiritual aspects of the person's life are preventing psychospiritual growth. Shoghi Effendi (1973), a leader in the Bahá'í faith, explained how fasting can facilitate this change:

It essentially is a period of meditation and prayer, of spiritual recuperation, during which the believer must strive to make the necessary readjustments in his inner life, and to refresh and reinvigorate the spiritual forces latent in his soul. (p. 27)

The psychospiritual effects of fasting fall primarily under the realm of transpersonal psychology. When fasting, an individual has the potential to experience *psychospiritual autophagy,* a process of holistic reintegration.

Mark Carney (2010) said, “Autophagy refers to a normal biological process that is self-protective” (p. 6). Carney referred to the definition of autophagy as a “segregation and digestion of part of the cell’s own cytoplasmic material within lysosomes” (Kuma et al., 2004). In his work, Carney discussed how research has shown that autophagy explains why “fasting has been known to shrink or completely rid the body of benign growths such as breast cysts and uterine fibroids, which are two examples of nonessential tissue that become recycled during a fast” (p. 6) The phenomenon of autophagy explains why fasters experience tremendous physiological changes, and may also suggest why remarkable psychological and spiritual changes occur as well.

The theory of psychospiritual autophagy proposes that fasting induces various types of autophagy on three levels; physiological, psychological, and spiritual. During psychospiritual autophagy, the psyche *segregates* and *digests* emotional and spiritual imbalances much in the same way as cellular autophagy. For people who experience psychospiritual autophagy—a significant change in the psychospiritual realm—post-fasting psychotherapy may be a useful intervention. The purpose and focus of psychotherapy would be to assist the faster in assimilating the psychospiritual changes that occurred during the fast, to prevent the faster from using defense mechanisms to dismiss or deny these changes. This premise, based on the theory of holism, suggests that when something as significant as autophagy occurs, it impacts the person on all levels; mind, body, and spirit. Mohandas Gandhi (2002/1962) explained the dynamic as follows:

> Just as there is an identity of the spirit, so there is an identity of matter and in essence the two are inseparable. Spirit is matter rarefied to the utmost limit. Hence, whatever happens to one’s body must affect the whole matter and the whole spirit. (p. 50)

This belief system is based on the principle of holism. Holistic approaches to health care appeared in what was termed *psychosomatic medicine* in the 1970s, and were used to conceptualize and treat psychosomatic phenomena (Lipowski, 1977). Instead of charting oneway causal links from the psyche to soma (the body), or vice-versa, it aimed at a systemic model, wherein multiple biological, psychological and social factors were seen as interlinked (Lipowski, 1984). At present, it is commonplace in psychosomatic medicine to state that psyche and the body really cannot be separated for practical or theoretical purposes. A disturbance on any level—somatic, psychic, or social—will radiate to all the other levels as well (Lipowski, 1986). In this sense, psychosomatic thinking is similar to the biopsychosocial model of medicine which links biology, psychology, and sociology in a similar manner (Lipowski, 1981). By the early 2000s, psychosomatic medicine had become a psychiatric subspecialty (Gitlin, Levenson, & Lyketsos, 2004).

In psychotherapy, holism is based on the concept that all aspects of a person—psychological, physical, and spiritual—affect one another (Millenson, 1995). Because the person is seen as whole comprised of these parts, it is posited that one aspect of the person cannot be affected without impacting the others. The concept of holism is found in transpersonal psychology (Daniels, 2005; Tart, 1997) and alternative medicine (Collinge, 1997). According to Frances Vaughan (1986), “We know that physical, emotional, and mental well-being are intimately connected…” (p. 1). Vaughan asserted that we must access “inner healing” in order to heal the whole person (p. 2).

According to Sharon G. Mijares and Gurucharan Singh Khalsa (2005) “Psychospiritual approaches also face the challenge of recognizing that many forms of extraordinary experience, of nonnormative feelings and behaviors, can be golden doorways to a deep level of change” (p. 5). This suggests that the most appropriate psychotherapeutic approach for individuals post-fast may be transpersonal psychology, since this school of psychology addresses such extraordinary and exceptional human experiences (Anderson, 1998; Braud, 2009).

Numerous scholars have discussed how fasting helps to restore an emotional balance in our lives (Buhner, 2012; Effendi 1973; Fredricks, 2011; Foster, 1998; Franklin, 2011; Hallesby, 1994/1931). Richard J. Foster (1998) explained the restoration in this manner: “Fasting helps us to keep our balance in life. How easily we begin to allow the nonessentials to take precedence in our lives. How quickly we crave things we do not need until we are enslaved by them” (p. 56).

Fasting often helps with emotional challenges due to the manner in which it takes the focus off of our own needs, opening us to a larger world. Thomas Ryan (1981) said, “If fasting is doing its work of liberating our focus from self-preoccupation, this will manifest itself in mercy and compassion toward those around us” (p. 119).

There is a Zulu axiom, “The continually stuffed body cannot see secret things” (as cited in Webster, 1973, p. 164). This sentiment was echoed by Mohandas Gandhi, who contended that fasting was an indispensable part of human existence that enables us to see deep within ourselves. Gandhi said, “The periods of fasting are part of my being. I can no more do without them than I can without my eyes. Fasting is for the inner self what the eyes are for the outside world” (as cited in Muller, 2010, p. 85).

There is no doubt that—on some occasions—fasting can be problematic and even dangerous. However, when used with mindfulness, it can produce exceptional human experiences and be both safe and profoundly therapeutic. Fasting is a means of creating paradigm shifts, mystical phenomena, and extraordinary events in a manner which few other practices can provide. As a shared practice among seekers throughout the ages, fasting continues to offer the opportunity of a new way of being.

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Introduction

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Chapter 3

The Physiological Process of Fasting Alirezaei, M., Kemball, C. C., Flynn, C. T., Wood, M. R., Whitton, J. L., & Kiosses, W. B. (2010). Short-term fasting induces profound neuronal autophagy. *Autophagy,* 6(6), 702-710. doi: 10.4161/auto.6.6.12376

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Chapter 5

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Chapter 7

Fasting and Transpersonal Psychology

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Chapter 8

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Chapter 10

Fasting in Religious and Spiritual Traditions

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Chapter 11

Inedia in Religious Mystics and Catholic Saints

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Fasting, Eating Disorders, and Food Addiction *Agras, W. S., & Apple, R. F. (2007). Overcoming eating disorders: A cognitive-behavioral therapy approach for bulimia nervosa and binge-eating disorder therapist guide. Oxford, UK: Oxford University Press.*

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Chapter 13

Hunger Artists, Fasting Girls, and Breatharians

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Chapter 15

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